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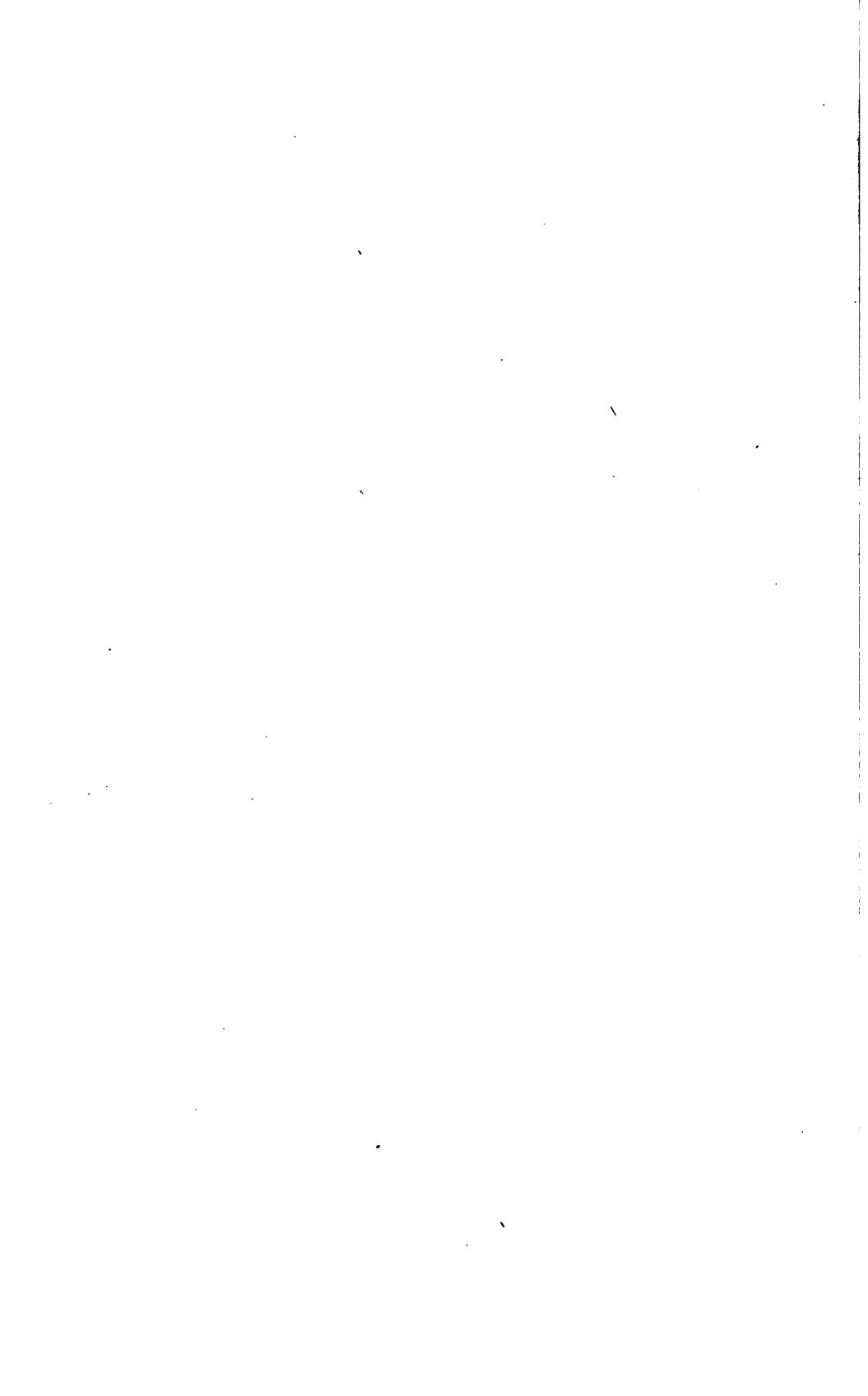
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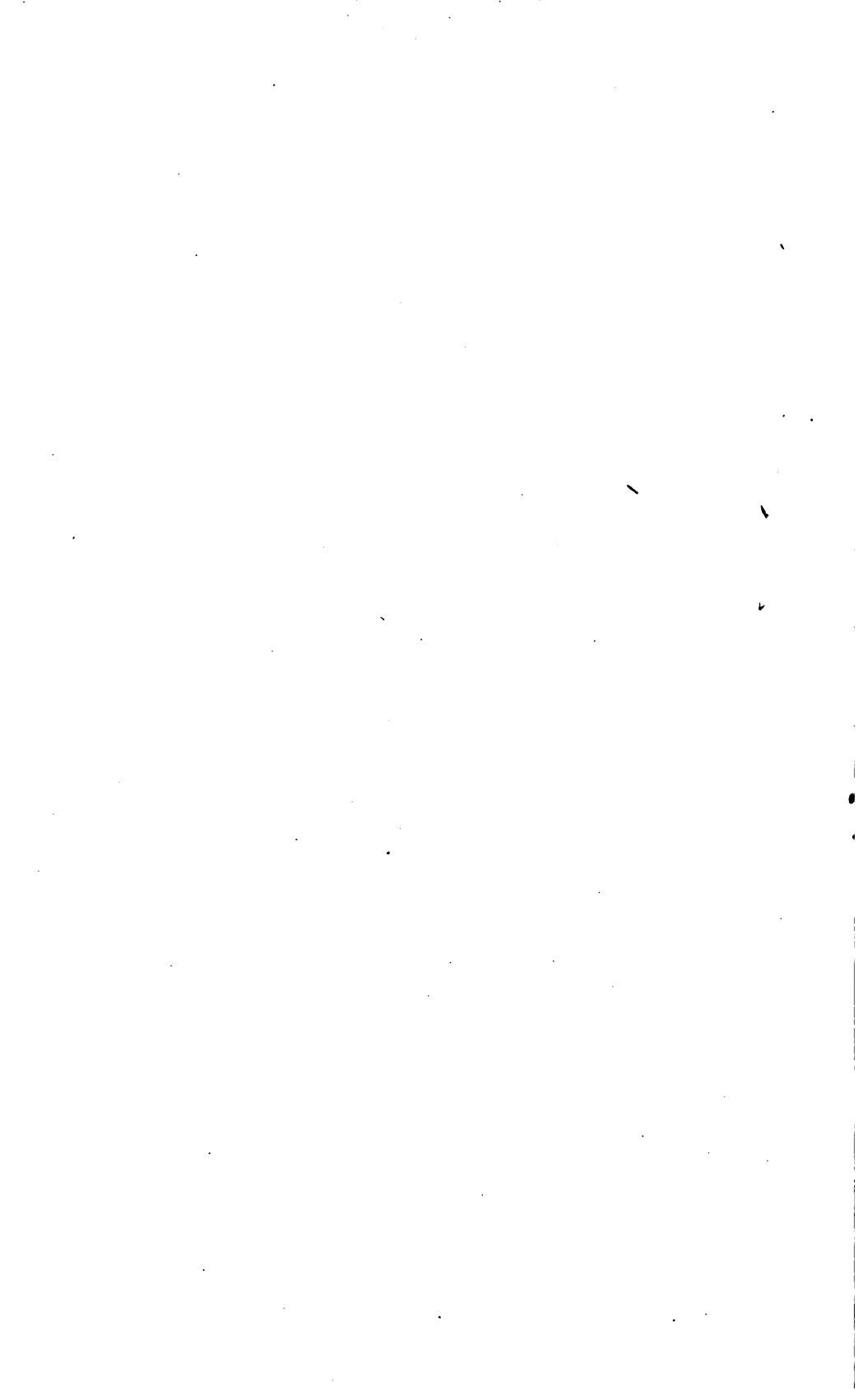
UNITED STATES GOVERNMENT

THROUGH

.....5 Sept 1901.....







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UNITED STATES CIVIL SERVICE COMMISSION.

Amend.
MANUAL OF EXAMINATIONS

FOR THE

CLASSIFIED CIVIL SERVICE

OF THE

UNITED STATES.

REVISED TO JANUARY 1, 1901.

[The Reports of the Commission, showing its work and containing the civil-service act, rules, and regulations, can be consulted at the principal public libraries.]

WASHINGTON:

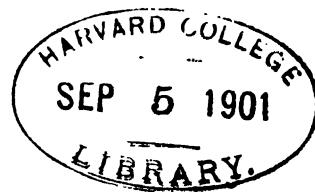
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CAUTION.

Applications for the regular schedule examinations mentioned in section 9 may be filed at any time, but unless received at the Commission at least ten days prior to the date selected for the examination they will not be accepted for that examination, but will be approved for the next examination of the kind held, or they may be changed for some other examination which will be held during the current series and to which the applicants may be eligible, provided request is received at least ten days prior to the date of the examination selected. When an application is approved for a scheduled examination, and the applicant given an opportunity for examination, and is not examined, the application will not be good for the next examination.

An applicant on returning his admission card with the request therefor may select the same or a different examination at a different date and place named in the schedule for the examination desired, provided the request is received by the Commission at least ten days prior to the date originally selected.

Applications for examinations to be held only when eligibles are needed will not be received until such examinations are announced, and will be accepted without regard to the regulation requiring them to be on file ten days before the date of examination.

Applicants should execute their applications with great care, answering every question on the application blank, carefully reviewing the jurat, officer's certificate, and vouchers after their completion, and should forward them at the earliest date possible, taking care to select from the schedule a date and place of examination which will comply with the above requirements.

Applicants should be careful to affix internal-revenue stamps to their applications, as required.

SPECIAL NOTICE.

(a) Only the examinations mentioned below will be held this spring, unless otherwise specially advertised. For dates and places of the same see section 9.

Aid, Coast and Geodetic Survey.	Railway mail clerk.
Assistant topographer.	Register and receiver's clerk.
Book typewriter.	Stenographer.
Clerk, promotion, Departmental service.	Surveyor-general's clerk.
Clerk, qualified as stenographer and typewriter (Land Office service).	Typewriter.
Copystat, topographic draftsman.	Stenographer and typewriter.
Elevator conductor.	Skilled laborer, Government Printing Office.
Hospital steward, Marine-Hospital Service.	Topographic draftsman (General Land Office and Departmental service).
Meat inspector.	Translator.
Press feeder.	

(b) The examinations mentioned below will not be held this spring.

Assistant examiner, Patent Office.	Internal revenue examination.
Apprentice.	Junior civil engineer.
Acting assistant surgeon, Marine-Hospital Service.	Matron, Indian service.
Assistant microscopist.	Mechanical and electrical engineer.
Bookkeeper.	Messenger.
Bookbinder.	Messenger boy.
Clerk, Departmental service.	Observer.
Compositor.	Physician, Indian service.
Civil and electrical engineer.	Pressman.
Electrotype molder.	Stereotyper.
Electrotype finisher.	Seamstress, Indian service.
Farmer.	Superintendent of construction.
Fish culturist.	Tagger.
Guard, United States penitentiary service.	Teacher, all kinds, Indian service.
	Trained nurse, Indian service.
	Watchman.

Applications may be filed at this time for examination for any of the above-named positions. Applicants for examinations for the positions mentioned in the list of those which will not be held this spring should indicate from section 9 of the Manual the place of examination, leaving the date blank. Persons whose applications are now on file with the Commission for examination for any of the positions mentioned in the list of those which will not be held this spring may have them changed for an examination which will be held, and to which they may be eligible, if they so desire, provided their request is received by the Commission at least ten days prior to the date of the examination selected. All applications which are now on file in this office and which are not changed for an examination which will be held this spring will be good for the next examination of the kind which may be held.

In pursuance of the law enacted by the Philippine Commission the President, under date of November 30, 1900, directed that this Commission render such assistance as may be practicable to the civil-service board created under the act of the United States Philippine Commission for the establishment and maintenance of an honest and efficient civil service in the Philippines, and for that purpose to conduct examinations for the civil service of the Philippine Islands upon the request of the civil service board of said islands, under such regulations as may be agreed upon by the two Commissions. No arrangements have yet been made for holding these examinations, owing to the fact that the Philippine board has not advised the Commission of their wishes in the matter.

Up to this time, owing to the limited facilities of this Commission, no arrangements have been made for holding examinations for local Federal positions in Hawaii or Porto Rico, consequently no definite information can at this time be given concerning examinations for positions in these places.

GENERAL INFORMATION.

Sec. 1. This Manual contains a full list of the examinations which are held on regular schedule dates and fully indicates their scope and character. It also gives very full information as to the method of entering the service through examination and as to the conditions of eligibility. Most of the questions which correspondents ask are answered herein; hence persons who are seeking for information should study the Manual carefully, as they will find more complete information therein than can be given in correspondence. (See sec. 17.)

Special attention is invited to the statistical tables under sec. 177, showing, with respect to the examinations mentioned, the number examined, the number that passed, and the number appointed during the fiscal years ended June 30, 1898, June 30, 1899, and June 30, 1900.

SCOPE OF THE CIVIL-SERVICE LAW.

Sec. 2. January 16, 1883, Congress passed what is known as the civil-service law. This act established the United States Civil Service Commission, to be composed of three members, not more than two of whom shall be adherents of the same political party. The act itself is a mere outline of its purposes, but for its amplification it provides for rules to be promulgated by the President, such rules to be equally binding with the statute upon the heads of departments and offices, as well as upon the Commission. The fundamental purpose of the law and rules is to establish, in the parts of the service within their provisions, a merit system whereby selection for appointment shall be made upon the basis of demonstrated relative fitness, without regard to political or other considerations. To carry out this purpose a plan of competitive examinations is prescribed.

The term "classified service" indicates the parts of the service within the provisions of the civil-service law and rules requiring appointments therein to be made upon examination and certification by the Commission, unless especially excepted from competition; the term "unclassified service" indicates the parts of the service which are not within those provisions, and therefore in which appointments may be made without examination and certification by the Commission.

Under the terms of the law positions outside the executive branch of the Government, positions to which appointment is made by the President and confirmed by the Senate, and positions of mere unskilled manual labor are not required to be classified. With these limitations, the President is authorized to direct, from time to time, in his discretion, the heads of departments and offices to extend the classified service. Under this authority the classified service has been gradually extended until it now includes about 80,000 individual positions. The Commission has nothing to do with classifying any positions except those in its own force. In the executive service not yet classified are the following: Consular service, post-offices without free delivery, governments of the District of Columbia and of Territories, Congressional Library, employees for taking the Twelfth Census, and some other parts of the service.

The civil-service law and rules do not give to the Commission any power of appointment and removal; that power is left where it was prior to such law, namely, in the President and heads of departments. Upon requisition of an appointing officer the Commission provides eligibles secured as the result of competitive examination; from the eligibles thus provided the appointing officer makes selection and appointment. When the Commission certifies three eligibles for any particular position, the appointing officer has absolute discretion in making selection and appointment from such eligibles, except that the rules require that selection shall be made without regard to political or other considerations. When certification is made the Commission's duty ends so far as an appointment is concerned, except, of course, it is charged with investigating and reporting any irregularity of appointment or removal.

A vacancy in the classified service may be filled either by original appointment upon examination and certification by the Commission, as explained, or by transfer or promotion from certain other positions in the classified service, or by reinstatement.

EXTENT OF THE CLASSIFIED CIVIL SERVICE.

Sec. 3. All that part of the executive civil service of the United States which has been or may hereafter be classified under the civil-service act shall be arranged in branches as follows: The Departmental Branch, the Custom-House Branch, the Post-Office Branch, the Government Printing Branch, and the Internal-Revenue Branch.

Sec. 4. The Departmental Branch shall include officers and employees as follows, except those in the service of the Government Printing Office and in the service of the several custom-houses, post-offices, and internal-revenue districts:

(a) All officers and employees of whatever designation, except persons merely employed as laborers or workmen and persons whose appointments are subject to confirmation by the Senate, however or for whatever purpose employed, whether compensated by a fixed salary or otherwise, who are serving in, or on detail from—

The several Executive Departments, the commissions, and offices in the District of Columbia.

The Railway Mail Service.

The Indian Service.

The several pension agencies.

The Steamboat-Inspection Service.

The Marine-Hospital Service.

The Light-House Service.

The Life-Saving Service.

The several mints and assay offices.

The Revenue-Cutter Service.

The force employed under custodians of public buildings.

The several subtreasuries.

The Engineer Department at large.

The Ordnance Department at large.

(b) All executive officers and employees outside of the District of Columbia not covered in (a), of whatever designation, except persons merely employed as laborers or workmen and persons whose appointments are subject to confirmation by the Senate, whether compensated by a fixed salary or otherwise—

Who are serving in a clerical capacity, or whose duties are in whole or in part of a clerical nature.

Who are serving in the capacity of watchman or messenger.

Who are serving in the capacity of physician, hospital steward, nurse, or whose duties are of a medical nature.

Who are serving in the capacity of draftsman, civil engineer, steam engineer, electrical engineer, computer, or fireman.

Who are in the service of the Supervising Architect's Office in the capacity of superintendent of construction, superintendent of repair, or foreman.

Who are in the service of the Treasury Department in any capacity.

Who are employed in the Department of Justice under the annual appropriation for the investigation of official acts, records, and accounts of officers of the courts, and all officers and employees in the penitentiary service who are by law subject to classification.

Sec. 5. The Custom-House Branch includes all officers and employees who have been, or may hereafter be, classified, who are serving in any customs district.

Sec. 6. The Post-Office Branch includes all officers and employees who have been, or may hereafter be, classified, who are serving in any free-delivery post-office.

Sec. 7. The Government Printing Branch includes all positions in the Government Printing Office except those of Public Printer and *unskilled* laborers or workmen.

Sec. 8. The Internal-Revenue Branch includes all officers and employees in any internal-revenue district who have been, or may hereafter be, classified under the civil-service act.

IN THE ORDER OF

respectively, for examination

printed schedule.
xamination.

sec. 115). Stenograph
Stenograph

ING AND CLERK, STEN
dates specified.

INNING APRIL 23:

sec. 60).

- DISTRICT OF COLUMBI**
- A { (B). Beatrice, Apr. 10.
(A). Grand Island, Apr. 24.
(C). Omaha, Apr. 10.
(E). Omaha, Apr. 11.
(D). Omaha, Apr. 23.
(A). Reno, Apr. 8.
(D). Reno, Apr. 23.
(A). Concord, Mar. 20.
(D). Concord, Apr. 23.
(A). Trenton, Apr. 12.
(B). Newark, Apr. 10.
(D). Trenton, Apr. 23.
(A). Albuquerque, Apr. 24.
(D). Albuquerque, Apr. 23.
(C). Albany, Mar. 28.
(E). Albany, Mar. 29.
(D). Albany, Apr. 23.
(A). Binghamton, Apr. 17.
(C). Brooklyn, Apr. 13.
(E). Brooklyn, Apr. 15.
(D). Brooklyn, Apr. 23.
(C). Buffalo, Apr. 20.
(E). Buffalo, Apr. 22.
(C). Rochester, Apr. 18.
(E). Rochester, Apr. 19.
(D). Rochester, Apr. 23.
(B). Utica, Apr. 10.
(A). Asheville, Apr. 26.
(B). Greensboro, Apr. 10.
(A). Raleigh, Mar. 22.
(D). Raleigh, Apr. 23.
(B). Statesville, Apr. 10.
(A). Wilmington, Mar. 25.
(D). Wilmington, Apr. 23.
(A). Bismarck, Apr. 3.
(A). Fargo, Apr. 1.
(D). Fargo, Apr. 23.
(B). Grand Forks, Apr. 10.
(C). Cincinnati, Mar. 20.
(E). Cincinnati, Mar. 21.
(D). Cincinnati, Apr. 23.
(C). Cleveland, Mar. 22.
(E). Cleveland, Mar. 23.
(D). Cleveland, Apr. 23.
(C). Columbus, Apr. 24.
(E). Columbus, Apr. 25.
(B). Ironton, Apr. 10.
(B). Toledo, Apr. 10.

The following is the schedule of examinations that will be held in For a list of the examinations Applicants may be examined Applicants should use the utm All applications must be on file In selecting places and dates

EXPLANATION:

(A) At all places marked "(A)"

Book-typewriter (see sec. 45).
Clerk qualified as stenographer
General Land Office service

(B) At all places marked "(B)"

FEDERAL LAND OFFICE, may be t

(C) At all places marked "(C)"

(D) At all places marked "(D)"

Aid, Coast and Geodetic Surv.
Assistant topographer (see sec.
Copyist topographic draftsmen

(E) At all places marked "(E)"

Date.

Mar. 20, Wednesday	(A) Con
Mar. 21, Thursday	(A) Port
Mar. 22, Friday	(A) St. J
Mar. 23, Saturday	(A) Bur
Mar. 24, Sunday	(C) Alb
Mar. 25, Monday	(E) Albr
Mar. 26, Tuesday	(A) Spr
Mar. 27, Wednesday	(C) Har
Mar. 28, Thursday	(E) Har
Mar. 29, Friday	(A) Wo
Mar. 30, Saturday	(A) Pro
Apr. 1, Monday	(C) Bos
Apr. 2, Tuesday	(E) Bos
Apr. 3, Wednesday	(A) Wil
Apr. 4, Thursday	(C) Phil
Apr. 5, Friday	(E) Phi
Apr. 6, Saturday	(A) Tre
Apr. 7, Sunday	(C) Bro
Apr. 8, Monday	(E) Bro
Apr. 9, Tuesday	(A) Bin
Apr. 10, Wednesday	(C) Roc
Apr. 11, Thursday	(E) Roc
Apr. 12, Friday	(C) Buf
Apr. 13, Saturday	(E) Buf
Apr. 15, Monday	(A) Wa
Apr. 17, Wednesday	(C) Hal
Apr. 18, Thursday	(E) Hal
Apr. 19, Friday	(A) Bal
Apr. 20, Saturday	At the f
Apr. 22, Monday	(D)
Apr. 24, Wednesday	(D)
Apr. 25, Thursday	(D)
Apr. 26, Friday	(D)
Apr. 27, Saturday	(D)
Apr. 29, Monday	(D)

Apr. 23	(D)
	(D)

e reverse side.)

stem-House, Internal Revenue, and Post-Office services. The list of all

sec. 79).

TYPEWRITER, CLERK, STENOGRAPHER-TYPEWRITER GEN.

Surveyor-general's clerk (see sec. 106).
Topographic draftsman (see sec. 83).
Translator (see sec. 85.)

(B) Miscellaneous.

[At the following-named cities all examinations named above under (A), except stenography and typewriting, book-typewriting and clerk, stenographer-typewriter General Land Office, may be taken on April 10.]

- | | |
|--------------------------------|--------------------------------|
| Apr. 10. (B) Aberdeen, S. Dak. | (B) Mason City, Iowa. |
| " (B) Alexandria, Va. | (B) Moberly, Mo. |
| " (B) Bangor, Me. | (B) Manistee, Mich. |
| " (B) Beatrice, Nebr. | (B) Marquette, Mich. |
| " (B) Bristol, Tenn. | (B) Newark, N. J. |
| " (B) Butte, Mont. | (B) New Whatcom, Wash. |
| " (B) Cairo, Ill. | (B) Owensboro, Ky. |
| " (B) Charleston, W. Va. | (B) Parsons, Kans. |
| " (B) Covington, Ky. | (B) Pueblo, Colo. |
| " (B) East St. Louis, Ill. | (B) Sacramento, Cal. |
| " (B) Eureka, Cal. | (B) Saginaw (East Side), Mich. |
| " (B) Fort Smith, Ark. | (B) Salina, Kans. |
| Colo. (B) Grand Forks, N. Dak. | (B) San Diego, Cal. |
| " (B) Great Falls, Mont. | (B) Santa Barbara, Cal. |
| an. (B) Greensboro, N. C. | (B) Scranton, Pa. |
| " (B) Ironton, Ohio. | (B) Sioux Falls, S. Dak. |
| " (B) Key West, Fla. | (B) Springfield, Ill. |
| " (B) La Crosse, Wis. | (B) Statesville, N. C. |
| " (B) Laramie, Wyo. | (B) Texarkana, Ark. |
| " (B) Lansing, Mich. | (B) Toledo, Ohio. |
| " (B) Laredo, Tex. | (B) Utica, N. Y. |
| " (B) Mankato, Minn. | (B) Waco, Tex. |

ex ...

Apr. 23

- | | | |
|-------------------|---------------------------|-----------------------|
| Portland, Oreg. | (D) Salina, Kans. | (D) Spokane, Wash. |
| Providence, R. I. | (D) Salt Lake City, Utah. | (D) Trenton, N. J. |
| Pueblo, Colo. | (D) San Antonio, Tex. | (D) Vicksburg, Miss. |
| Raleigh, N. C. | (D) San Francisco, Cal. | (D) Washington, D. C. |
| reno, Nev. | (D) Seattle, Wash. | (D) Wichita, Kans. |
| Richmond, Va. | (D) Sioux Falls, S. Dak. | (D) Wilmington, N. C. |
| Rochester, N. Y. | (D) St. Louis, Mo. | (D) Wilmington, Del. |

APPLICATION BLANKS REQUIRED.

Sec. 10. Below will be found an alphabetical list of the spring schedule examinations mentioned in this Manual, showing the form numbers of the application blanks which must be executed for the different examinations. The form numbers of the required blanks are in parentheses following the names of the examinations. The general application blank, Form 304, must be executed and filed for nearly all examinations, while supplementary statements on additional forms must be filed for technical, trades, and certain other positions. Each applicant should be careful to see that the proper blank or blanks have been sent for the examination desired; otherwise he should immediately request the Commission to forward the proper blank as shown by the list, stating the examination desired and the number of the blank wanted. Whenever more than one form of application blank is used, both forms should be forwarded to the Commission in the same envelope. However, in case the applicant first receives only Form 304, that form should be immediately executed and forwarded, and the supplementary statements, if required, should be forwarded as soon as possible thereafter.

Title of examinations and form numbers of application blanks required.

Aid, Coast and Geodetic Survey (304 and 375).	Press feeder (304 and 1145).
Assistant topographer (304 and 375).	Railway mail clerk (304).
Book typewriter (304).	Register and receiver's clerk (304).
Clerk, promotion, departmental service (372, or 304 and 372).	Skilled laborer, Government Printing Office (304).
Clerk, qualified as stenographer and typewriter, Land Office service, (304).	Stenographer (304).
Copyist, topographic draftsman (304 and 375).	Stenographer and typewriter (304).
Elevator conductor (304 and 394 or 1093).	Surveyor-general's clerk (304).
Hospital steward, Marine Hospital Service (304 and 375).	Typewriter (304).
Meat inspector (304 and 375).	Topographic draftsman (General Land Office and departmental service (304 and 375).
	Translator (304).

IMPORTANT.

SEC. 11. Owing to the large amount of work now devolving upon the Commission, it frequently happens that admission cards for examination can not be mailed until a few days prior to the examination; examination papers are marked as expeditiously as possible, but no definite information can be given as to when any particular papers will be completed. Notices of standing will always be mailed as soon as the averaging of the papers is completed. Applicants and competitors will please remember these facts and refrain from writing letters of inquiry unless absolutely necessary. Such letters only increase the Commission's work and thereby lengthen the time which must elapse before the application or examination papers can be disposed of.

In case it is necessary to make inquiry, however, the reply will be mailed more promptly if you will copy the form below for your letter, filling in the appropriate blank spaces and making the necessary inquiry under the proper heading. Confine your inquiry to one subject. Write directly to the Commission instead of some presumably influential person.

Do not send stamps to the Commission, as its replies do not require postage.

Date: _____ 190 _____

UNITED STATES CIVIL SERVICE COMMISSION,
Washington, D. C.

Legal residence of applicant, _____

Exact title of examination, _____

City in which examined, or to be examined, _____

Date of examination, _____

Average attained (if already examined), _____

INQUIRY OR REQUEST:

Signature: _____
(Make signature identical with that used in application.)

Post-office address: _____, No. _____ St.
(City) (State)

PERSONS WHO SHALL NOT BE EXAMINED.

Sec. 12. No person is eligible to an examination—

- (a) Who is not a citizen of the United States (see sec. 29, Regulation V);
- (b) Who is not within the age limitations prescribed for the examination for which he applies (see sec. 14);
- (c) Who is physically disqualified for the service which he seeks;
- (d) Who is addicted to the habitual use of intoxicating beverages to excess;
- (e) Who is barred by Application Regulations IX and X (see sec. 29);
- (f) Who is enlisted in the United States Army or Navy, and has not secured permission for his examination from the Secretary of War or the Secretary of the Navy, respectively.
- (g) Who has been dismissed from the public service for delinquency or misconduct within one year preceding the date of the examination selected by him;
- (h) Who has failed after probation to receive absolute appointment to the position for which he again applies within one year from the date of the expiration of his probationary service;
- (i) Who has made a false statement in his application, or has been guilty of fraud or deceit in any manner connected with his application or examination, or who has been guilty of crime or infamous or notoriously disgraceful conduct.

Sec. 13. Applications will not be received from legal residents of the District of Columbia for the bookkeeper, clerk, compositor, elevator conductor, messenger, and watchman examinations unless such applicants are allowed preference under section 1754, Revised Statutes. This does not apply to the custom-house, internal-revenue, and post-office services.

AGE LIMITS FOR THE CLASSIFIED CIVIL SERVICE.

Sec. 14. Section 4 of Civil Service rule V provides as follows: No application for examination shall be accepted unless the applicant is within the age limitations fixed herein for entrance to the position to which he seeks to be appointed: *Provided*, That, subject to the other conditions of these rules, the application of any person whose claim of preference under the provisions of section 1754 of the Revised Statutes has been allowed by the Commission may be accepted without regard to his age. (See sec. 176.) The age limitations for entrance to positions in the different branches of the service shall be as follows:

Departmental Branch:		Minimum.	Maximum.
Page, messenger boy, apprentice (other than apprentice in mints and assay offices) or student.....		14	20
Apprentice in mints and assay offices.....		18	24
Printer's assistant and messenger		18	No limit.
Positions in the Railway Mail Service		18	35
Hospital stewards in the Marine-Hospital Service.....		21	30
Keeper, assistant keeper, and officers of light ships in the Light-House Service		18	50
Cadet in the Revenue-Cutter Service, and aid in the Coast and Geodetic Survey.....		18	25
Surfman in the Life-Saving Service.....		18	45
Superintendent, physician, supervisor, day-school inspector, disciplinarian, matron, and assistant matron in the Indian Service; inspector and assistant inspector of hulls, and inspector and assistant inspector of boilers in the Steamboat-Inspection Service.....		25	55
Observer in the Weather Bureau Service		18	30
All other positions		20	No limit.
(The age limitations shall not apply in the case of the wife of the superintendent of an Indian school who applies for examination for the position of teacher or matron.)			
Custom-House Branch:			
All positions		20	No limit.
Post-Office Branch:			
Letter carrier.....		21	40
All other positions.....		18	No limit.
Government Printing Branch:			
All positions (male).....		21	No limit.
All positions (female).....		18	No limit.
Internal-Revenue Branch:			
All positions		21	No limit.

NONCOMPETITIVE EXAMINATION HELD BY THE COMMISSION.

Sec. 15. These examinations are not held on schedule dates, but are held only on the official request of the head of the department in which the vacancy occurs.

The appointment of Indians as superintendents, teachers, teachers of industries, kindergartens, and physicians in the Indian service at large may be made upon the request of the Secretary of the Interior after noncompetitive examination.

Appointments to the excepted positions named below, in the custom-house service and in the internal-revenue service, are subject to an examination to be prescribed by the Secretary of the Treasury equivalent to the examination held by the Commission for positions of like grade. Such examinations are conducted by the Commission in accordance with its regulations:

CUSTOM-HOUSE SERVICE:

Not exceeding one cashier in each customs district, if authorized by the Secretary of the Treasury.

Not exceeding one chief or principal deputy or assistant collector at each customs port; and not exceeding one principal deputy collector of customs at each subport or station.

Not exceeding one deputy naval officer at each customs port where a naval officer is authorized by law.

Not exceeding one deputy surveyor of customs at each customs port where a surveyor is authorized by law.

INTERNAL-REVENUE SERVICE:

All deputy collectors of internal revenue who are borne on the rolls as such and the allowance for whose salaries is approved by the Secretary of the Treasury.

All storekeepers and gaugers whose compensation does not exceed \$3 per day when actually employed and whose aggregate compensation shall not exceed \$500 per annum.

CLASSIFIED POSITIONS FILLED WITHOUT EXAMINATION BY THE COMMISSION.

Sec. 16. The positions indicated below are either entirely excepted from examination, or are not subject to competitive examination by the Commission; hence it is useless to write to the Commission to know how to obtain such places. Letters seeking information in regard to them should be addressed to the head of the department to which the position is attached.

Any position filled by a person whose place of private business is conveniently located for his performance of the duties of said position, or any position filled by a person remunerated in one sum both for services rendered therein and for necessary rent, fuel, and lights furnished for the performance of the duties thereof: *Provided*, That in either case the performance of the duties of said position requires only a portion of the time and attention of the occupant, paying him a compensation not exceeding, for his personal salary only, \$300 per annum, and permitting of his pursuing other regular business or occupation.

Any person in the military or naval service of the United States who is detailed for the performance of civil duties.

Any person employed in a foreign country, under the State Department, or who is temporarily employed in a confidential capacity in a foreign country under any executive department or other office.

Any position the duties of which are of quasi-military or quasi-naval character and for the performance of which duties a person is enlisted for a term of years or positions in the Revenue-Cutter Service where the persons enlist for the season of navigation only.

One assistant postmaster, or chief assistant to the postmaster, of whatever designation, at each post-office.

Any local physician employed temporarily as acting assistant surgeon in the Marine-Hospital Service.

Any person employed in the Marine-Hospital Service as quarantine attendant at the Gulf, South Atlantic, Tortugas, Reedy Island, and Angel Island quarantines; and any person temporarily employed as quarantine attendant on quarantine vessels, or in camps or stations established for quarantine purposes during epidemics of contagious diseases in the United States or beyond the seas.

Any person in the Quartermaster's Department at large of the United States Army employed as train master, chief packer, foreman packer, pack master, master baler, foreman of laborers, superintendent of stables, or forage master.

Any person in the Medical Department at large of the United States Army employed as chief packer, packer, or assistant packer.

Any person in the Ordnance Department at large of the United States Army employed as foreman, assistant foreman, forage master, weigher, skilled laborer, guard, or on piece work.

Any person in the Engineer Department at large of the United States Army employed as subinspector, overseer, suboverseer, superintendent, master lock manager, deputy lock manager, assistant superintendent of canal, chief deputy inspector, deputy inspector, rodman, stadianaman, chainman, foreman, timekeeper, lock master, assistant lock master, custodian, storekeeper, fort keeper, torpedo keeper, assistant torpedo keeper, light keeper, board master, subforeman, master laborer, gauge reader, steward, dam tender, assistant dam tender, helper, carpenter's helper, machinist's helper, quarry master, blacksmith's helper, climber, barge master, recorder of vessels, track man, gardener, assistant gardener, or weigher.

Any person in the national military parks at Gettysburg, Shiloh, Chickamauga, Chattanooga, Vicksburg, and Antietam, employed as commissioner, assistant in historical work, agent for purchase of land, historian, secretary, rodman, chainman, assistant superintendent, chief guardian, guardian, guard, inspector, carpenter, steam engineer, or painter.

Any person employed as officer or field deputy in the office of a United States marshal.

All persons at navy-yards, naval stations, and at private shipbuilding and manufacturing establishments where work is done by contract for the Navy Department, employed as special mechanics and civilian assistant inspectors of work and materials (including ordnance, armor, armor plate, marine engines, hulls, buildings, dredging, etc.).

Also all persons employed as ship draftsmen, marine engine and boiler draftsmen, architectural draftsmen, structural steel-work draftsmen, electrical draftsmen, cartographic draftsmen, and ordnance draftsmen, including assistant or lower-class draftsmen of the various grades.

All physicians employed as pension-examining surgeons, whether organized in boards or working individually under the direction of the Commissioner of Pensions. This does not include medical examiners in the Pension Office.

Indians employed in the Indian service at large, except those employed as superintendents, teachers, teachers of industries, kindergartners, and physicians.

Temporary clerks employed in United States local land offices to reduce testimony to writing in contest cases, not paid from Government funds.

Temporary clerks employed in the offices of surveyors-general, and paid from the funds deposited by individuals for surveying public lands.

Not exceeding two private secretaries or confidential clerks to the President.

ALL EXECUTIVE DEPARTMENTS.

Not exceeding two private secretaries or confidential clerks to the head of each of the eight Executive Departments.

Not exceeding one private secretary or confidential clerk to each of the assistant heads of the eight Executive Departments.

Not exceeding one private secretary or confidential clerk to each of the following heads of bureaus appointed by the President and confirmed by the Senate in the eight Executive Departments: The Commissioner of Internal Revenue, the Treasurer of the United States, the Comptroller of the Currency, the Comptroller of the Treasury, the Superintendent of the Coast and Geodetic Survey; in the War Department, the Major-General Commanding the Army, the Adjutant-General, the Inspector-General, the Judge-Advocate-General, the Quartermaster-General, the Commissary-General of Subsistence, the Surgeon-General, the Paymaster-General, the Chief of Engineers, the Chief of Ordnance, the Chief Signal Officer, the Chief of the Record and Pension Office, and the Superintendent of Public Buildings and Grounds; and in the Department of the Interior, the Commissioner of the General Land Office, the Commissioner of Indian Affairs, the Commissioner of Patents, the Commissioner of Education, the Assistant Attorney-General for the Interior Department, the Director of the Geological Survey, and the Commissioner of Pensions.

Not exceeding one private secretary or confidential clerk to each of the heads of bureaus appointed by the President and confirmed by the Senate in the eight Executive Departments not enumerated in paragraph next above, if authorized by law.

All persons appointed by the President without confirmation by the Senate.

Attorneys, assistant attorneys, and special assistant attorneys.

DEPARTMENTS OR OFFICES NOT IN EXECUTIVE DEPARTMENTS.

Not exceeding one private secretary or confidential clerk to the Commissioner of Labor.

Not exceeding one private secretary or confidential clerk to the Commissioner of Fish and Fisheries.

CLASSIFIED CIVIL SERVICE.

Not exceeding one private secretary or confidential clerk to the Secretary of the Smithsonian Institution.

Not exceeding one private secretary or confidential clerk to each of the Interstate Commerce Commissioners.

TREASURY DEPARTMENT.

All shipping commissioners.

Not exceeding one private secretary or confidential clerk, if authorized by the Secretary of the Treasury, to the collector of each customs district where the receipts for the last preceding fiscal year amounted to as much as \$500,000.

Not exceeding one private secretary or confidential clerk, if authorized by the Secretary of the Treasury, to each of the appraisers at the ports of Boston, New York, and Philadelphia, respectively.

Not exceeding one counsel before the Board of United States General Appraisers.

Not exceeding one paymaster in the New York customs district.

All positions in Alaska in the customs and internal-revenue services.

Officer in charge of the Bureau of Statistics.

Not exceeding one chief clerk in each mint or assay office, who is authorized by law to act for the superintendent or assayer in charge during his absence or disability.

One private secretary or confidential clerk to the superintendent, one cashier, one deposit weigh clerk, one assistant coiner, one assistant melter and refiner, and one assistant assayer in each mint or assay office.

WAR DEPARTMENT.

All paymasters' clerks.

DEPARTMENT OF JUSTICE.

Wardens, chaplains, and physicians in the United States penitentiaries or prisons. Not to exceed one private secretary or confidential clerk to each United States district attorney.

Examiners.

POST-OFFICE DEPARTMENT.

The Assistant Attorney-General for the Post-Office Department.

Not exceeding one private secretary or confidential clerk to the Assistant Attorney-General.

Not exceeding one private secretary or confidential clerk to the postmaster, if authorized by the Postmaster-General, at each post office where the receipts of the last preceding fiscal year amounted to as much as \$350,000.

One assistant postmaster or the chief assistant to the postmaster of whatever designation, at each post-office.

Not exceeding one auditor at the post-office in New York City.

Not exceeding one finance clerk, if authorized by law and regularly and actually assigned to act as auditor, at each post office where the receipts for the last preceding fiscal year amounted to as much as \$350,000.

Not exceeding one cashier or finance clerk at each first-class post-office.

Not exceeding one cashier and one finance clerk at each post-office where the receipts for the last preceding fiscal year amounted to as much as \$500,000.

Not exceeding one cashier and two finance clerks at each post-office where the receipts for the last preceding fiscal year amounted to as much as \$1,000,000.

Not exceeding one cashier and three finance clerks at each post-office where the receipts for the last preceding fiscal year amounted to as much as \$2,000,000.

Not exceeding one clerk, who shall be a regular physician, at each first-class post-office, when authorized by the Postmaster-General, to examine applications for sick leave, and also to act as a general utility clerk.

DEPARTMENT OF THE INTERIOR.

The superintendent of the Hot Springs Reservation.

One special land inspector.

Inspectors of coal mines in the Territories.

Special agents employed, as necessity for their employment may arise, for the purpose of protecting public lands.

The inspectors of surveyors-general and district land offices.

Superintendents of irrigation in the Indian service.

Superintendents of logging in the Indian service.

Five special Indian agents, as authorized by law.

Special agents for the allotment of land in severalty to the Indians, as the necessity for their employment may arise.

Special commissioners to negotiate with Indians, as the necessity for their employment may arise.

Engineers to make surveys of reservation boundary lines and surveys at Indian agencies, as the necessity for their employment may arise.

Examiners of Indian timber lands, as the necessity for their employment may arise.

One financial clerk at each Indian agency to act as agent during the absence or disability of the agent.

All positions in the Alaska school service.

Not exceeding five special pension examiners to investigate fraudulent and other pension claims of a criminal nature.

One clerk at each pension agency to act for the agent during his absence or disability.

Not exceeding one clerk, who shall act as private secretary or confidential clerk to the Superintendent of the Government Hospital for the Insane.

DEPARTMENT OF AGRICULTURE.

Agents and experts who are temporarily appointed and employed in making investigations and furnishing information for the Department, as provided by law or under the direction of the head of the Department, which agents and experts shall be borne on the rolls as such and be actually engaged in the duties for which they are appointed, and whose payment has been authorized by law.

One statistical agent in each State and Territory where authorized by law.

SMITHSONIAN INSTITUTION.

The Assistant Secretary of the Smithsonian Institution, in charge of the United States National Museum.

BUREAUS AND INDIVIDUALS ADVERTISING SPECIAL INFORMATION FOR APPLICANTS.

Sec. 17. The Commission frequently receives letters from different parts of the country inclosing advertisements of individuals and bureaus claiming to have special information of value to applicants and special facilities in preparing them for civil-service examinations. The writers of these letters inquire whether, in the opinion of the Commission, the claims of these individuals and bureaus are genuine or not. Attention is called to the fact that the Manual of instructions and the schedule of examinations, which are furnished to every applicant upon request, contain all the information about the times and places of examinations, the method of marking papers, certifying eligibles, and the prospect of securing appointments, and they also contain specimen questions of examinations. No person has any information of importance to applicants concerning examinations which can not be obtained without cost from this Manual or by request to the Commission. All claims to the contrary are therefore misrepresentations.

This Manual is intended to furnish all the information which applicants will need concerning the classified civil service. These instructions should be carefully read, as they answer most of the questions which applicants ask in their letters of inquiry, and if carefully studied will save much needless correspondence. Letters in regard to examinations and other business of this Commission should not be addressed to members of Congress or other persons not connected with the Commission, as this only causes delay and does not in any way assist the applicant. Such communications should be addressed directly to the United States Civil Service Commission, Washington, D. C. (See sec. 11.)

INFORMATION FOR APPLICANTS.

Sec. 18. In the table below will be found a list of the services for which examinations are held. Commencing at section 33 will be found descriptions of the examinations pertaining to each of these services. Some of these examinations may be taken on schedule dates and others only when eligibles are needed. A full list of those which may be taken on schedule dates may be found in the schedule, section 9.

	Page.		Page.
Departmental Service at Washington.....	38	Marine-Hospital Service	75
Custodian Service.....	54	Mint and Assay Service.....	79
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General Land Office Service.....	59	Post-Office Service	84
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Internal-Revenue Service.....	73	Steamboat-Inspection Service	87
Life-Saving Service.....	74	Subtreasury Service	92
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The entire classified service may be divided into three classes, with reference to the provision made for filling vacancies:

POSITIONS FOR WHICH REGISTERS ARE MAINTAINED.

Sec. 19. The first class includes those positions for which registers of eligibles are constantly maintained. For this class examinations are ordinarily held twice a year, on the regular schedule dates. A list of the examinations which may be taken this spring may be found in section 9 of this Manual. Applications for these examinations should be made on the "application blank," which is mailed with every Manual. (See sec. 10.)

TECHNICAL OR SCIENTIFIC POSITIONS.

Sec. 20. The second class includes positions in which vacancies occur less frequently and for which no registers of eligibles are ordinarily maintained. Examinations for these positions are held only when eligibles are needed. It is the practice of the Commission to announce such examinations through the newspapers as items of news. The announcement is made at least thirty days before the date of the examination, unless a necessity exists for filling the vacancy in less time, in which case a notice of not more than two or three weeks is sometimes given. No complete list of such positions can be furnished, as it is impossible to predict in what positions vacancies may occur; neither can any information be given here as to the character of the examinations required for such positions, because in these cases the examination must be adapted to the nature of the work required, and no general scheme of examination would apply to particular positions. The regular application for examination will not be accepted for these special examinations until such examinations are announced.

Persons who have special or technical qualifications or who desire to compete for any position not covered by scheduled examinations may obtain from the Commission a blank (Form 376) request to be notified of special or technical examinations, and file it with the Commission. Whenever one of such examinations is announced, the Commission will notify all persons who have requested notification of an examination of the character of the one to be held. Below is a partial list of such positions:

Agrostologist; anatomist; assistant in seed investigations; assistant in physics; assistant geologist; assistant civil engineer; assistant, Coast and Geodetic Survey; assistant, Smithsonian Institution; astronomer; aid, assistant, etc., Geological Survey; botanical artist; bibliographer; cartographic draftsman; cataloguer; chart corrector; chemist; Chinese interpreter; civil engineer; climatologist; computer; copyist of mechanical drawings; draftsman, other than those contained in manual; editorial clerk; electrician; entomologist; forestry clerk; horticulturist; horticultural assistant; hydrographer, assistant; illustrator, agrostology division, Agricultural Department; immigration service; inspector, clothing, etc.; instrument maker;

interpreter; lapidist, Geological Survey; librarian (departmental); lithographer, engraver, etc.; map colorer; mechanical engineer; microscopist; music teacher, Indian Service; nautical expert; National Museum, scientific positions, etc.; ornithologist; pharmacist; photographer; pomologist; pattern maker; road expert; scientific assistant, Fish Commission; special employee; special agent, Treasury Department, etc.; soil physicist; tea examiner; telegrapher; vault, safe, and lock expert; verifier of weights and measures; vegetable pathologist; wood engraver, and many other positions.

PROMOTIONS, REINSTATEMENTS, AND TRANSFERS.

Sec. 21. The third class includes all of those positions in the classified service in which vacancies are regularly filled by transfer, promotion, or reinstatement, and not by appointment of persons outside of the service. No list of such positions can be furnished. It is becoming more and more the practice of the departments to fill the higher grade positions, such as chiefs of division, etc., by promotion or transfer instead of by original appointment. Inquiries in reference to transfers, reinstatements, or promotions should be addressed to the head of the department in which transfer, reinstatement, or promotion is sought.

Sec. 22. The only positions for which applications for examination on schedule dates this spring can be accepted are those which are indicated in sections 9 and 10 of the Manual. All other places must be treated in the manner described in the second and third classes above. The foregoing remarks, however, do not apply to examinations for the Custom-House or Post-Office branches. For information in regard to these two branches of the service, see secs. 91 and 153.

WHEN EXAMINATIONS ARE HELD.

Sec. 23. The regular schedule examinations for the Departmental and Government Printing branches of the service are held twice a year, unless otherwise specified, in the spring and in the fall. The spring examinations occur usually in the months of March and April and the fall examinations in the months of September and October. (For examination schedule, see sec. 9.) This paragraph does not apply to the Custom-House and Post-Office branches.

The Internal-Revenue examinations are held only in the fall.

In pursuance of the law enacted by the Philippine Commission, the President, under date of November 30, 1900, directed that this Commission render such assistance as may be practicable to the civil-service board created under the act of the United States Philippine Commission for the establishment and maintenance of an honest and effective civil service in the Philippines, and for that purpose to conduct examinations for the civil service of the Philippine Islands upon the request of the civil-service board of the said islands under such regulations as may be agreed upon by the two Commissions. No arrangements have yet been made for holding these examinations, owing to the fact that the Philippine board has not yet advised the Commission of their wishes in the matter. Up to this time, owing to the limited facilities of this Commission, no arrangements have been made for holding examinations for local Federal positions in Hawaii or Porto Rico, consequently, no definite information can at this time be given concerning examinations for positions in these places.

SECURING, EXECUTING, AND FILING APPLICATION BLANKS.

Sec. 24. The application blank and Manual for the Departmental, Government Printing, and Internal-Revenue branches of the classified service may be obtained by writing directly to the "United States Civil Service Commission, Washington, D. C." Each applicant must, however, write for his own application blank, as it is contrary to the practice of the Commission to forward blanks to one person for the use of another.

There is no need of seeking the aid of any prominent or presumably influential person to secure an application blank or an examination (see sec. 17), and no recommendations other than those provided for by the Commission should be forwarded, as the rules forbid the filing of any such letters with the application. Applicants should read carefully the application regulations under sec. 29.

Sec. 25. No person will be admitted to a schedule examination who has not previously filed the proper application for the particular examination which he seeks, on the form which will be furnished by the Commission upon request of the applicant. For some examinations a supplementary blank will be required in addition to the regular application blank, and both blanks must be executed and forwarded to the Commission. (See sec. 10.)

Full instructions for the execution of the application will be found on the blank itself, and applicants are cautioned to answer all questions and conform in all respects to the printed instructions. (See sec. 29.) A failure to do this causes unnecessary delays and great annoyance to the applicant as well as to the Commission. Very many applications have to be returned for correction on account of carelessness in the execution of either the application or vouchers. (See also sec. 10.)

Sec. 26. An applicant should first decide what kind of examination he desires to take. A full description of the various kinds of examinations which may be taken on schedule dates and some which can be taken only when eligibles are needed will be found, commencing at sec. 33. The full list of examinations which may be taken on schedule dates may be found at the top of the schedule, marked A, B, C, D, or E. The places of examination are also preceded by these letters, indicating the dates on which and places at which the examinations may be taken. Applicants should be careful to see that the dates and places selected are those on and at which the kind of examination desired may be taken. Care in this respect will save both the applicant and the Commission much trouble. For schedule, see section 9.

Applicants for the Departmental and Government Printing branches of the classified service may be examined at places selected from the schedule outside of their own State if more convenient, provided the date and place selected for examination be indicated in the application; *but applicants for the Custom-House, Internal-Revenue, or Post-Office branches of the classified service must be examined in the custom-house or internal-revenue district or at the post-office in which they desire employment.*

Sec. 27. Where an applicant desires to compete in two or more examinations in which the grade subjects are the same, such as clerk, bookkeeper, etc., of the first grade, or watchman, messenger, etc., of the third grade, and examinations for farmer and industrial teacher, matron and seamstress, or clerk, stenography, and typewriting, only one application is necessary, provided each examination desired is specifically mentioned in the application; but separate applications must be filed for the Post-Office, Custom-House, or Internal-Revenue services, and for all examinations wherein the basis subjects differ materially, as in the departmental clerk, railway mail, and tagger examinations.

If the examinations requested in the application require evidence as to experience, a separate form for this experience must be filed for each of the different examinations desired.

Sec. 28. An applicant may take only one kind of examination at one time and place, except that he may take tagger and railway-mail clerk and clerk, typewriting and stenography on one schedule date, provided these examinations are given during the series. He may also take as many examinations under "D" as he desires upon filing the proper applications.

Sec. 29. APPLICATION REGULATIONS.

Applicants should read the following regulations governing the approval of applications, as these regulations will be strictly observed.

I. Time limits for filing: Applications for the regular schedule examinations may be filed at any time, but unless received at the Commission at least ten days prior to the date selected for the examination they will not be accepted for that examination. This does not apply to applications filed for examinations which are held on dates other than those mentioned in the schedule. Applications received less than ten days before the date set for an examination may be changed to apply for any other examination to which the applicant may be eligible and which will be held during the current series, provided the request for such change is received at least ten days prior to the date of the examination selected. When an application is approved and the applicant given an opportunity to be examined at one semianual series of examinations, for the Departmental and Government Printing services, or for any special examination which may be held, and fails for any reason to appear for examination, that application will not be good for the next examination of the kind held. An application will not be approved which is dated or the vouchers of which are dated more than six months prior to its receipt by the Commission. Applications for examinations to be held only when vacancies occur will not be received until such examinations are announced.

II. Applications not accepted on day of examination: No person shall be admitted to a regular schedule examination whose application has not been previously filed with the Commission and approved in accordance with Regulation I. Examiners are prohibited from accepting applications on the day of examination and from admitting persons who have not complied with the requirements and procured admission cards or other proper authority in advance.

III. Application to be executed in ink: Every question in the application must be fully answered. All writing in the applications, vouchers, and certificates must

be in ink, and in the handwriting of the signer. Applicants for certain trades examinations requiring no scholastic tests may sign their applications by mark, if unable to write.

IV. Name to be uniform: In all places in the application, vouchers, and certificates the first name, middle initial, and surname of the applicant must be correctly given and must be uniform or consistent throughout the application. Women must prefix the title Miss or Mrs. The post-office address must be in the handwriting of the applicant, and will be changed only upon the written order of the applicant, which order, when received, will be filed with the application.

V. Citizenship: All applicants must make oath in their applications to their United States citizenship. In the case of foreign-born citizens, proof of citizenship must be furnished. If naturalized, the certificate of naturalization must accompany the application. A foreign-born person who claims that his parents were citizens of the United States at the time of his birth must furnish the sworn statements of at least two disinterested persons to prove that to their knowledge his parents were United States citizens at the time of the applicant's birth, and that they did not previously, then, or at any subsequent time renounce, or legally declare their intention of renouncing, their United States citizenship, and also that the applicant is the reputed child of the person through whom he claims citizenship. A foreign born citizen who was naturalized by the naturalization of his father or his mother while he was a minor must furnish the parent's certificate of naturalization and the sworn statements of two disinterested persons to prove his identity as the child of the one whose certificate is furnished. A woman who claims naturalization through marriage to a citizen of the United States must furnish evidence of the husband's citizenship (his certificate being required if he is a naturalized citizen) and evidence of her marriage to him.

An application from a foreign-born person claiming citizenship, but failing to furnish the required proof, will be canceled. A declaration of intention to become a citizen will not be accepted in lieu of a certificate of naturalization. When naturalization papers are lost, certificate must be procured from the court that issued the naturalization papers, showing the facts in the case.

VI. Jurat; legal residence: Every applicant must personally appear and make oath to the statements in his application before an officer who is authorized to administer oaths for general purposes, and the officer's signature must be authenticated by his official impression seal. If the officer has no official seal, he must obtain a certificate of his authority from the proper officer who has the custody of an official seal, which certificate must be attached to the paper.

Every applicant must make oath in his application to the place of his legal residence, which must be shown continuously to the exact date of application, and which must be corroborated by the vouchers required on his application paper. Legal residence does not require continuous bodily presence, but refers to the place at which the applicant, if a voter, is legally entitled to exercise the right of suffrage. Applications for examinations for positions in the departments at Washington, subject to the apportionment law, must show that the applicant has been a legal resident of the county in which he claims legal residence for not less than six months next preceding the date of his application. A married woman living apart or divorced from her husband may for the purpose of filing an application for examination claim legal residence other than that of her husband, but she must furnish a sworn statement of the facts on which her right to a separate legal residence is based. The Commission will decide in each case whether the evidence presented establishes the claim. The legal residence of minors is the same as that of the parents or guardian.

VII. Observation of age limits: No application shall be approved if the applicant is under the minimum age required for the examination which he seeks, or if he is past the maximum age limitation, on the date of the examination.

VIII. Crime, persons indicted for: Persons who have been indicted for, or convicted of, any crime must inclose with their applications a certified copy of the court proceedings showing the essential facts of the case.

IX. Applicant for or eligible from more than one examination: The entire classified service is arranged in branches as follows: The Departmental Branch (including the Railway Mail and the Indian services), the Custom-House Branch the Post-Office Branch, the Government Printing Branch, and the Internal-Revenue Branch. Subject to the restrictions of Regulation X and those hereinafter mentioned, a person may at the same time be an applicant for as many examinations as in as many of the different branches of the service as he may desire, upon filing the proper applications therefor, and his name will be entered on each of the registers of eligibles secured from the examinations in which he attains an eligible average, except that no person shall at the same time be an applicant for or eligible from examination for more than one postal, customs, or internal-revenue district, or for

more than one position in any postal district; but an eligible for one postal, customs, or internal-revenue district may be examined for another postal, customs, or internal-revenue district upon filing with his application for such examination a written request for the cancellation of his present eligibility for a postal, customs, or internal-revenue district, which eligibility will not be canceled, however, except upon his passing said examination: *Provided*, That the restrictions of this regulation shall not apply in cases of examinations which are held only when eligibles are needed and for which consequently it is desirable that all persons possessing the necessary qualifications should compete.

Whenever a person whose name is upon more than one register is appointed from one of such registers, his eligibility on all registers expires upon such appointment. He may, however, upon his written request at any time within the period for which eligibility would run, if not canceled by appointment, have his eligibility revived on one or more of such registers for the balance of such period.

In any branch of the service except the post-office an applicant may, if he so desires, upon filing one application and upon indicating it in his application, have his name entered upon the registers for all positions for entrance to which the same examination is given, provided he is physically qualified and within the proper age limitations. Applicants will not, however, be allowed to change the designations of the registers upon which they desire their names entered, as indicated in their applications, after the date set for the close of receipt of applications for any examination.

X. Reexamination: A person who takes an examination for the classified service will not be allowed reexamination for the same position, or for any position covered by the same examination, until approximately one year after the date of the former examination, except upon special authority of the Commission, to be granted when, in its opinion, equity or the needs of the service demand such action: *Provided*, That persons who pass or fail in any examination may, upon filing a new application, be reexamined at the corresponding examination held about one year later, though the full year may not have elapsed. In the event that they attain eligible averages in such reexamination, their names will be entered upon the register in the order of their grades, together with the other eligibles from the examination, and said entry will be treated as canceling their eligibility from the former examination. But in the event of their failing in the second examination, the eligibility from the previous examination shall continue.

Reexaminations other than those named above will be granted only in very exceptional cases, in which injustice has for any reason been done or suffered, and in such cases the request for reexamination must be accompanied by a sworn statement of the alleged facts upon which it is based. A simple statement that the applicant did not do himself justice will not be regarded as sufficient ground for allowing a reexamination. An applicant who is recovering from illness must abide by the result of his examination, whether or not he states in his declaration sheet that he is physically unable to do himself justice.

XI. Delinquency or misconduct: A person who has been separated from any branch of the service for delinquency or misconduct within one year next preceding the date of the examination selected is ineligible, and applications from such persons will be canceled. A person who fails to receive absolute appointment, after probation, to the grade for which he again applies is ineligible for reexamination for one year from the expiration of his probationary service.

XII. Vouchers: Vouchers Nos. 1 and 2 (application blank, Form 304) must be executed by citizens of the United States possessing the following requirements:

They must each be at least 21 years of age.

They must be both legal and actual bodily residents of the State in which the applicant claims legal residence.

They must have known the applicant for at least six months.

Neither of them should be the same person as the one who signs the officer's certificate or the physician's certificate.

The certificate of an officer, showing the county of which the applicant is a legal resident, must be furnished by all applicants for departmental and Government printing examinations, and the signer of it must be an officer in the county in which the applicant claims legal residence, who has an official (impression) seal, or who furnishes the certificate of the proper officer showing that he is an officer in the county entitled to a seal. A notary public or other officer in the county may be accepted on this voucher.

Vouchers will not be accepted from the father, mother, sister, brother, son, daughter, husband, or wife of the applicant, and not more than one voucher will be accepted from a relative of a more remote degree of relationship.

Applicants for the trades examinations and applicants for positions requiring professional, scientific, or technical knowledge must file supplementary statements on blanks furnished for that purpose, or in form and manner to be prescribed.

XIII. Railway Mail Clerk; height and weight: No application for the Railway Mail Service shall be approved when the applicant is shown to be less than 5 feet 4 inches in height or less than 125 pounds in weight, or is physically defective in any particular. (See sec. 155.)

XIV. Government Printing Service; previous experience: No application for any one of the mechanical trades in the Government Printing Office shall be approved unless the applicant is shown to have served at least five years at the trade for which he applies, three of which years he must have served as an apprentice and at least one year as a journeyman.

XV. Disposal of applications: All applications which are received are inspected, and if not disapproved, admission cards will be mailed to the applicants. (See sec. 11.) All applications which show the applicants to be ineligible for the examinations which they seek, either on account of age, height, weight, citizenship, delinquency, or misconduct while in the service, or for other reasons, will be disapproved and retained in the files of the Commission. All applications which are defective in their execution, and can be corrected by the applicant, will be returned for correction, but an application which has been twice returned for correction and is still found to be incomplete or incorrect will be disapproved.

XVI. Applications part of Commission's records: Applications which have been approved or disapproved and all examination papers of competitors form parts of the official records of the Commission, and can not, under any circumstances, be returned to the applicants or competitors.

WHAT APPLICANTS SHOULD BRING TO EXAMINATION ROOM.

Sec. 30. Persons taking the typewriter examination must provide themselves with typewriting machines and stands or tables; those taking the draftsman or other examinations requiring the use of instruments, must furnish the instruments required. Applicants must provide themselves with pens, penholders, pencils, erasers, and ink. Applicants should not bring any paper for use in the examination room, as blank paper and blotters will be furnished to all applicants in connection with the examination sheets.

Each applicant must present his admission card in order to be admitted to the examination.

CHANGE OF ADDRESS.

Sec. 31. Applicants and eligibles must keep the Commission informed of any change of post-office address. A failure to do so will be treated as the fault of the applicant or eligible, and may result in his losing an opportunity of appointment. Requests to have the address changed should be made by letter in the form indicated in sec. 11, and such letter should relate only to the change in address. (See Regulation IV, sec. 29.)

REEXAMINATION ON CERTAIN SUBJECTS NOT NECESSARY.

Sec. 32. A person attaining an eligible average on the grade subjects of any examination which comprises *all the grade subjects*, except geography, of any one grade, will not again be required to take the same subjects as a part of any technical examination for a period of five years, although, if he so desires, he may be reexamined on the grade subjects not oftener than once a year. This regulation will not be construed to include the stenographer and typewriter examination, for which all the first-grade subjects are not required. Eligibility in those examinations requiring only grade subjects, such as clerk, Departmental Service, tagger, messenger, etc., and in general examinations for the Railway Mail Service and in the Post-Office, Custom-House, and Internal-Revenue branches of the service will not be continued beyond one year.

Applicants who take all the scholastic subjects of a particular grade, forming the whole or a part of any examination in any series of semiannual schedule examinations will not be again permitted to take the same subjects as the whole or a part of any other examination during the same series.

DESCRIPTIONS OF EXAMINATIONS.

Sec. 33. The general scholastic subjects of many examinations, such as spelling, arithmetic, letter writing, and copying from plain copy, are of three grades or degrees of difficulty, known as first, second, and third grades—the first grade being the most difficult and the third grade the least difficult. These subjects are designated under the different examinations as "grade subjects." In the descriptions of examinations comprising any of these subjects reference will be made to the particular grade of the subject comprised. In addition to these subjects, the subject of copying from rough draft is included in the first grade and the subject of geography in the second grade.

Sec. 34. The different subjects in each examination are given relative weights according to their importance. These weights represent the value of each subject in the whole examination. The method of obtaining the general average of an examination is as follows: Multiply the average obtained in each subject by the relative weight of that subject, add the products, and divide the sum of the products by the sum of the relative weights. The quotient thus obtained will be the general average for that examination.

Sec. 35. FIRST GRADE SUBJECTS.

1. *Spelling*: Twenty words slightly above average difficulty. 2. *Arithmetic*: Fundamental rules, fractions, percentage, interest, discount, analysis, and statement of simple accounts. 3. *Letter writing*: Test in the use of the English language for business correspondence. 4. *Penmanship*: Marked on legibility, rapidity, neatness, and general appearance. 5. *Copying from plain copy*: An exact written copy of a few printed lines. 6. *Copying from rough draft*: Draft of manuscript with interlineations, erasures, misspelled words, errors in syntax, etc., of which a smooth corrected copy is to be made.

The following questions and tests indicate the general character of these subjects:

SPELLING.

Spelling is dictated by the examiner. The words are written by the competitor in the blank spaces indicated on the first sheet of the examination. All words should be commenced with capital letters. The examiner pronounces each word and gives its definition as printed below. The competitor is required to write only the word and not its definition.

Ginger: The root of a medicinal plant. **Certificate**: A written testimony; as, a certificate of stock. **Promissory**: Containing a promise; as, a promissory note. **Seizing**: Taking suddenly. **Zinc**: A whitish metal. **Adjacent**: Lying near or bordering on. **Property**: In a proper or right manner. **Schenectady**: A city of the United States. **Opportunity**: A fit or convenient time. **Insertion**: The act of placing in; as, the insertion of an advertisement. **Usage**: Custom in using; as, commercial usage. **Facilitate**: To make easy; as, to facilitate business. **Legible**: Capable of being read; as, a legible signature. **California**: One of the United States. **Flannel**: A soft woolen cloth of loose texture. **Business**: Occupation or trade. **Handkerchief**: A piece of cloth for wiping the face or nose. **Strychnine**: A powerful poison. **Concede**: To give up; to yield; as, to concede a point. **Souvenir**: A token of remembrance; a keepsake.

ARITHMETIC.

In solving problems the processes should be not merely indicated, but all the figures necessary in solving each problem should be given in full. The answer to each problem should be indicated by writing "Ans." after it.

1. This question comprises a test in adding numbers crosswise and lengthwise. There are usually three columns of about twelve numbers each to be added. 2. Divide $47\frac{1}{2}$ by 73, multiply the quotient by 31, and to the product add 0.0907 of 214.6. 3. A grocer sold goods to a customer, amounting to \$352, by weights averaging 15 $\frac{1}{2}$ ounces to the pound. He afterwards sold to the same customer goods amounting to \$320, by weights averaging 16 $\frac{1}{2}$ ounces to the pound. How much did the grocer make or lose by the false weights? 4. The appropriation for the Civil Service Commission for the fiscal year ended June 30, 1897, was \$98,340. During that year 50,000 persons were examined. If 34 per cent of this number failed to pass, and 17 $\frac{1}{2}$ per cent of those who passed were appointed, what was the average cost to the Government of each appointment? 5. On December 1, 1900, Thomas Hammond, a commission merchant, owed James Wilson on account \$343.75. December 3 Wilson shipped Hammond 8,500 pounds of pork which he sold at 12 cents per pound, charging $\frac{1}{2}$ per cent commission. December 7 Hammond sold Wilson 80 head of cattle, total weight 105,960 pounds, at \$4.25 per 100 pounds. December 14 Hammond sold for Wilson 1,800 bushels of wheat at 75 cents per bushel, charging him 1 per cent commission and \$25 for storage. December 26 Wilson bought of Hammond 128,600 feet of lumber, at \$3.25 per 1,000 feet. December 27 Hammond received from Wilson a note for \$1,250, due in 60 days. December 29 Wilson paid a draft drawn on him by Hammond for \$460. Make an itemized statement of the above account as it should appear taken from the books of Wilson; make a proper heading, close the account, and bring down the balance as it should appear January 1, 1901.

FIRST GRADE.

SIXTH SUBJECT.—*Copying from rough draft.*

N. B.—Spelling, use of capitals, and all omissions and mistakes will be taken into consideration in marking this subject.

Directions to the competitor.—Write on the accompanying blank sheet a smooth copy of the manuscript on this sheet. Make such changes only as are necessary to correct errors in syntax, orthography, punctuation, and capitalization, and to write in full abbreviated words. Paraphrasing and the insertion or omission of words which does not improve the text are not permitted.

The number of our writers of fiction has greatly increased within the last quarter of a century. This class of literature has received an impulse from the establishment of periodicals, in them we find some of the best authors of England and America employed to instruct their readers. The minds of the reading public are exposed to the best thoughts of the age perfectly expressed in classic English. In this connection the literature of the newspapers should not be forgotten. Important questions relating to the improvement of society (are discussed in them) these articles are written by able men frequently in a (racy and graceful style) and often vigorous and forcible thus the newspaper also becomes a power for good in diffusing knowledge thus training the minds of the people for a still more intelligent appreciation of literature and a higher plane of general culture.

CLASSIFIED CIVIL SERVICE.

LETTER WRITING.

The competitor is permitted to write on either one of two subjects given. The following subject has been used: Write a letter of not less than 150 words giving your views as to the advantages and disadvantages of employment in the departmental service in Washington.

This exercise is designed to test the competitor's knowledge of simple English composition and his general intelligence. In marking the letter, its errors in form and address, in spelling, capitals, punctuation, syntax, and style, and its treatment of the subject are considered.

PENMANSHIP.

The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise of the fifth subject—copying from plain copy. No particular style of penmanship is preferred.

COPYING FROM PLAIN COPY.

N. B.—Paragraph, spell, capitalize, and punctuate precisely as in the copy. All omissions and mistakes will be considered in marking this subject.

Make an exact written copy of the following:

The civil-service act has also limited the power of removal by providing that no person serving in any department or office shall be removed because of his refusal (1) to contribute for a political purpose, or to render political service; or (2) to permit the appointing officer, or any other person in the service, to coerce his political action. The object of Congress in thus limiting the power of appointment and removal was manifestly to divorce the subordinate offices of the Government from politics and elections. The law provides that open, competitive examinations shall be held by the commission; that these examinations shall be practical in their character, and, so far as may be, shall relate to those matters which will fairly test the relative capacity and fitness of the persons examined to discharge the duties of the places to which they seek appointment. (Fourth Report, page 139.)

COPYING FROM ROUGH DRAFT.

For explanation and specimen of this exercise see page 21. This copy of the rough-draft exercise is greatly reduced in size and is therefore not so legible as the examination exercise will be.

Sec. 36. SECOND GRADE SUBJECTS.

1. *Spelling*: Twenty words of average difficulty in common use. 2. *Arithmetic*: Embraces addition, subtraction, multiplication, and division of whole numbers, and common and decimal fractions. 3. *Letter writing*: Test in the use of the English language for business correspondence. 4. *Penmanship*: Marked on legibility, rapidity, neatness, and general appearance. 5. *Copying from plain copy*: An exact copy of a few printed lines, in competitor's handwriting. 6. *Geography of the United States*.

The following questions and tests indicate the general character of these subjects:

SPELLING.

Spelling is dictated by the examiner. The words are written by the competitor in the blank spaces indicated on the first sheet of the examination. All words should be commenced with capital letters. The examiner pronounces each word and gives its definition. The competitor is required to write only the word and not its definition.

Manual: Done with the hands; as, manual labor. *Newspaper*: A printed paper that gives the news. *Exceed*: To surpass or go beyond; as, to exceed one's authority. *Eighth*: Next in order after seventh. *Wisconsin*: One of the United States. *Vehicle*: That in which anything may be carried. *Peaceable*: Gentle or peaceful. *Eager*: Keenly desirous; as, eager to go. *Cellar*: A storeroom under a house. *Delicate*: Very nice; as, a delicate flower. *Assign*: To set apart; as, to assign to duty. *Conceal*: To hide or secrete; as, to conceal valuable. *Minute*: The sixtieth part of an hour. *Benefit*: Advantage or profit. *Awning*: A cover spread for shade. *Forward*: To send toward a destination; as, to forward mail. *Withhold*: To hold back; as, to withhold one's pay. *Diligent*: Busy or active; as, a diligent clerk. *Offered*: Presented for acceptance or rejection. *Station*: A stopping place; as, a railway station.

ARITHMETIC.

In solving problems the processes should be not merely indicated, but all the figures necessary in solving each problem should be given in full. The answer to each problem should be indicated by writing "Ans." after it.

1. Add the following, and from the sum subtract 32,885,696 (here will be given a short column of figures). 2. Multiply $\frac{1}{2}$ by 36.8, and divide the product by 1.92. Solve by decimals. 3. A carrier can assort 43 letters or 37 papers in a minute. At this rate, how many hours will it take him to assort 3,655 letters and 185 pounds of papers, averaging 7 papers to the pound? 4. A lot which was 53 feet wide and 150 feet long sold for \$8,347.50, which was one-fourth more than it cost. What was the cost per square foot? 5. In a certain mail there are 294 pounds 14 ounces of newspapers weighing at the rate of 3 papers to every 7 ounces. How many papers are there in the mail? 16 ounces = 1 pound.

LETTER WRITING.

The competitor is permitted to write on either one of two subjects given. The following subject has been used:

Write a letter of not less than 125 words giving your views as to the advantages derived from free public libraries in the principal cities of your State. This exercise is designed chiefly to test the competitor's skill in simple English composition. In marking the letter, its errors in form and address, in spelling, capitalization, punctuation, syntax, and style, and its adherence to the subject will be considered.

PENMANSHIP.

The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise of the fifth subject—copying from plain copy. No particular style of penmanship is preferred.

COPYING FROM PLAIN COPY.

[N. B.—Paragraph, spell, capitalize, and punctuate precisely as in the copy. All omissions and mistakes will be taken into consideration in marking this subject.]

Make an exact written copy of the following:

No recommendation of an applicant, competitor, or eligible, involving any disclosure of his political or religious opinions or affiliation, shall be received, filed, or considered, by the commission, by any board of examiners, or by any nominating or appointing officer. In making removals or reductions, or in imposing punishment for delinquency or misconduct, penalties like in character shall be imposed for like offenses, and action thereupon shall be taken irrespective of the political or religious opinions or affiliations of the offenders. A person holding a position on the date said position is classified under the civil-service act shall be entitled to all the rights and benefits possessed by persons of the same class or grade appointed upon examination under the provisions of said act.

GEOGRAPHY OF THE UNITED STATES.

N. B.—Competitors are cautioned not to exceed the requirements of the questions in their answers, as no credit will be given for additional information.

1. Name States as follows: One which borders Alabama on the north; one which borders New Hampshire on the east; one which borders New Mexico on the north; one which borders Indiana on the west; one which borders Pennsylvania on the north. 2. Name the largest city in Rhode Island; the largest city in Oregon; the capital of Louisiana; the capital of Nebraska; the capital of West Virginia. 3. Name a river and another large body of water which border on each of the following-named States: Wisconsin, Maryland, Washington, Vermont, Texas. 4. Name the river or body of water on which each of the following-named important cities is situated: Louisville, Buffalo, Duluth, Hartford, Vicksburg. 5. In what State or Territory is each of the following-named prominent cities located: Worcester, Phoenix, Key West, Sioux Falls, Camden, Asheville, Utica, Saginaw, Rutland, Dubuque.

Sec. 37. THIRD GRADE SUBJECTS.

1. *Spelling*: Twenty simple words in ordinary use. 2. *Arithmetic*: Embraces addition, subtraction, multiplication, and division of whole numbers and of United States money. 3. *Letter writing*: Test in the use of the English language for business correspondence. 4. *Penmanship*: Marked on legibility, rapidity, neatness, and general appearance. 5. *Copying from plain copy*: An exact copy of a few printed lines, in competitor's handwriting.

The following questions and tests indicate the general character of these subjects:

SPELLING.

Spelling is dictated by the examiner. The words are written by the competitor in the blank spaces indicated on the first sheet of the examination. All words should be commenced with capital letters. The examiner pronounces each word and gives its definition. The competitor is required to write only the word and not its definition.

Sugar: A sweet substance made from the juice of the sugar cane. *Pledge*: Something given as security. *Cashier*: One who has charge of money in a bank. *Figure*: A mark representing a number. *Carrying*: Conveying or transporting in any way. *Breadth*: The measure from side to side. *Sheet*: The amount of paper made in one body or piece; as, a sheet of paper. *Easily*: In an easy manner. *Frontier*: The border or limits of a country. *Patience*: The habit of being patient. *Guess*: The act of guessing; as, to guess at one's weight. *Threat*: The act of threatening; as, to make a threat. *Diamond*: A precious gem. *Visit*: To go to see; as, to visit a friend. *Repair*: To mend or make over; as, to repair clothes. *People*: The body of persons composing a nation; as, the American people. *Require*: To be in need of; as, to require money. *Grease*: Soft animal fat. *Answer*: To reply to; as, to answer a letter. *Exist*: To live; as, to exist in poverty.

ARITHMETIC.

In solving problems the processes should be set merely indicated but all the figures necessary in solving each problem should be given in full. The answer to each problem should be indicated by writing "Ans." after it.

1. (This question will consist of a short column of figures to be added.) 2. Divide 2,408,588 by 4,732. 3. Multiply 8,643 by 808, and then subtract 98,746. 4. A merchant who spent \$225, bought 65 pounds of butter at 30 cents per pound, 81 barrels of apples at \$2.25 per barrel, and spent the remainder for coffee. How much did he spend for coffee? 5. During the month of August 450,000 bushels of wheat were shipped from a certain port. During September 87,960 more bushels were shipped than during August. What was the total number of bushels shipped in the two months?

LETTER WRITING.

The competitor is permitted to write on either one of two subjects given. The following subject has been used:

Write a letter containing not less than 100 words stating some of the advantages now derived by mankind from the art of printing. This exercise is designed chiefly to test the competitor's skill in simple English composition. In marking the letter, its errors in form and address, in spelling, capitalization, punctuation, syntax, and style, and its adherence to the subject, will be considered.

CLASSIFIED CIVIL SERVICE.

PENMANSHIP.

The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise of the fourth subject—copying from plain copy. No particular style of penmanship is preferred.

COPYING.

[N. B.—Paragraph, spell, capitalize, and punctuate as in the copy. All omissions and mistakes will be taken into consideration in marking this subject.]

Make an exact written copy of the following:

The present postal policy is to carry newspapers in some cases free, and in all other cases at much lower rates of postage than is charged for letters; the one being for the public weal, while the other is for private benefit. If the telegraph becomes a part of the service it will still be the duty of the Department to transmit telegrams for the press at much lower rates than for private individuals.

DEPARTMENTAL SERVICE.

Sec. 38. Aid examination, Coast and Geodetic Survey, Departmental Service.—Age limits, 18 to 25 years; application forms, 304 and 375; time allowed, seven hours on the first day for the first three subjects, and six hours on the second day for the remaining subjects. This examination may be taken only at the semianual examination in the spring, on the date and at the places marked D in the schedule, section 9. Entrance salary, \$720.

Subjects.	Weights.
1. Mathematics, including the elements of calculus and descriptive geometry to and including projections.....	25
2. Astronomy, including the determination of latitude, longitude, and azimuth, and the use of the telescope in field work.....	20
3. Physics, including the elements of optics, magnetism, etc.....	20
4. Surveying, including topography and the use of ordinary field instruments, and the calculation of results.....	15
5. Geography of the United States.....	10
6. Modern languages, including translations into English from any two European languages.....	10
Total	100

The following questions and tests will indicate the general character of the examination:

MATHEMATICS.

[Logarithmic tables will be furnished.]

1. What angle does $\frac{1}{6}$ of an inch subtend at a distance of 1,000 feet? 2. State the sum of the interior angles of a closed plane figure bounded by straight lines. Give proof. 3. What is the differential of the sine of an arc? And show geometrically its significance, and, by a practical example, the use of the result. 4. Compute all parts of a triangle having given angle A $33^{\circ} 0' 10''$, angle B $45^{\circ} 0' 20''$, and sides AB 1,000 meters. 5. Describe the difference between the orthographic, stereographic, and different kinds of conic projections, and the advantages of each where they are employed. Explain generally the methods of descriptive geometry, and illustrate by an example.

ASTRONOMY.

1. State the different methods of determining latitude, longitude, and azimuth, and compare their relative accuracy. 2. Give the adjustments of the transit instrument, and explain the method of making each. 3. Derive the azimuth factor, and show how it is applied in the reduction of meridian observations. 4. State approximately at what o'clock Alpha Lyrae (right ascension 18h. 33m.) comes to the upper meridian on April 28, and give the reasoning. 5. Can the southern cross, declination 62° south, be seen from the United States? Give the reasons for your answer.

PHYSICS.

1. Name three processes by which heat is diffused. 2. What is the pressure in grams of the atmosphere on a square meter of the earth's surface at sea level, assuming the density of mercury to be 13.6? Give work in full. 3. What is meant by the C. G. S. system of units? 4. The periods of vibration of two pendulums are as 2 to 3; what is the ratio of their lengths? 5. What is an achromatic lens? What is an aplanatic lens? 6. Give a rough method of getting the magnifying power of the telescope of a surveyor's transit. 7. What is meant by the index of refraction of a substance? 8. Name the three elements of terrestrial magnetism which are usually determined by a magnetic survey. 9. Define agonic line. 10. What is meant by diurnal and what by secular variation of the magnetic needle?

SURVEYING.

- 1.** Mention one method by which the size and figure of the earth can be found, and another by which its figure can be deduced. **2.** Describe, briefly, two different kinds of apparatus suitable for measuring a base line. **3.** What is meant by the reduction to sea level of a measured distance, and why is such a correction applied? **4.** What is meant by "spherical excess," and when is it necessary to take it into account? **5.** When does the sum of the azimuth and back azimuth of two intervisible stations differ from 180°? **6.** A level has a scale value of 5 seconds to a millimeter; what is its approximate radius of curvature? **7.** What is meant by the adjustment for "wind" in a level? **8.** Represent a conical hill by six contour lines.

GEOGRAPHY OF THE UNITED STATES.

- 1.** Give the approximate geographical limits, by degrees of latitude and longitude, of the United States, and its approximate area. **2.** Name the States touched by the Mississippi River. **3.** Bound Illinois and Georgia. **4.** Name five of the principal rivers emptying into the Atlantic. **5.** Give the heights of the highest five mountain peaks in the United States, and their location, excluding Alaska.

MODERN LANGUAGES.

Make a close translation of any two (and only two) of the following languages into idiomatic English:

French.—Au lieu d'enfoncer le tube dans le mercure, on peut le soulever de manière que son extrémité inférieure soit légèrement au-dessus de la surface du mercure. Comme il ne se produit plus alors une fermeture hydraulique, l'élévation du niveau est presque imperceptible. Si, dans cette position du tube, on place l'anode à son intérieur, on constate naturellement un abaissement du niveau dont la valeur est plus forte que celle de la précédente élévation. Ce résultat est dû à la différence des dimensions du tube et du vase. Dans cette dernière expérience, on peut évidemment remplacer le mercure par un métal solide; mais on remarque alors qu'il ne se produit aucune variation de niveau.

German.—Entfernt man sich in der Aquatubebene mehr und mehr von der Erde, so nimmt die Anziehung ab, die Zentrifugalkraft dagegen zu, bis endlich an einer Stelle Gleichheit eintritt. Darüber hinaus überwiegt die Zentrifugalkraft. Man kann nun diejenigen Niveaufläche, in deren Äquator jene Gleichheit statt hat, als äusserste Niveaufläche bezeichnen, insofern sie unter gewissen Voraussetzungen die Grenze der Atmosphäre sein muss. Wir betrachten hier übrigens diese Fläche nur zu dem Zwecke, um an einem Beispiel zu erkennen, wie sich die Niveauflächen bei grösserem Abstande von der physischen Erdoberfläche verändern.

Spanish.—Si caen los cuerpos abandonados á si mismos, es en virtud de una fuerza atractiva que los dirige hacia el centro de la tierra, y no por su propia espontaneidad; si disminuye gradualmente la velocidad de una bola en una mesa de billar, es por efecto de la resistencia del aire que desaloja, y por el roce sobre el tapete. Por consiguiente, de esto no debe deducirse que la bola tenga más bien tendencia al reposo que al movimiento, según decian algunos filósofos antiguos, que comparaban la materia con una persona perezosa. No habiendo resistencia, sigue sin alteración el movimiento, como nos lo demuestran los astros en su revolución al rededor del sol.

Italian.—I fenomeni di attrazione e di repulsione notati, possono venire indicati schematicamente come ora dirò. La fig. 2 rappresenta il caso in cui il filo A, visto in sezione, è unito metallicamente dal di fuori del tubo di una sfera col catodo C. Sulla parete fluorescente si ha allora una zona M in ombra, la quale è molto più larga dell'altra mu che si avrebbe se A fosse neutro. I raggi catodici, che in questo caso sarebbero sensibilmente rettilinei, sono invece indicati in figura con delle linee di sensibilissima curvatura.

Sec. 39. Apprentice, Departmental Service.—Age limits, 14 to 20 years; application forms, 304 and 1013; time allowed, three hours; examination may be taken in the fall only at the places marked A, B, or C in schedule, section 9.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	15
2. Arithmetic (third grade, see sec. 37)	15
3. Letter writing (third grade, see sec. 37)	15
4. Penmanship	15
5. Copying from plain copy (third grade, see sec. 37)	15
6. Tracing ¹	25
Total	100

¹ Under this head applicants will be given credit for any kind of previous training which would tend to qualify them for the position sought. The physical condition of applicants may be considered for plate printer's apprentice.

Sec. 40. Assistant (or Scientific Assistant), Department of Agriculture, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, seven hours on first day for educational subjects and English composition. On succeeding days, except where otherwise noted, three hours will be allowed for each major subject and two hours for each minor subject. This examination will be held only when eligibles are needed, due announcement of which will be made in the public press.

In addition to giving the title of the examination in their applications, applicants

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must state in what major subject or subjects and in what minor subject or subjects they wish to be examined. These subjects must be selected in accordance with the plan outlined below.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	1.5
2. Arithmetic (first grade, see sec. 35).....	2.5
3. Letter-writing (first grade, see sec. 35).....	2.5
4. Penmanship	1.5
5. Copying from plain copy (first grade, see sec. 35).....	1
6. Copying from rough draft (first grade, see sec. 35).....	1
7. General training and experience.....	5
8. English composition.....	5
9. Examination in major special scientific or technical subject.....	50
10. Examination in two required chief minor subjects.....	20
11. Examination in additional minor subjects.....	10
Total.....	100

(a) Division A: (1) Chemistry, analytical, agricultural, or industrial; (2) Physics, especially as applied to meteorology, soils, and irrigation; (3) Meteorology; (4) Botany, systematic; (5) Vegetable physiology and pathology; (6) Horticulture; (7) Bacteriology; (8) Forestry; (9) Zoology; (10) Ornithology and mammalogy; (11) Entomology, general and economic; (12) Physiology and nutrition of man; (13) Animal pathology; (14) Animal production and dairying; (15) Rural engineering, especially as applied to road making and irrigation; (16) Practice of agriculture; (17) Statistics, especially of agricultural resources and productions; (18) *Physical geography; (19) *General physics; (20) *General chemistry; (21) Drawing and drafting.

(b) Division B: (22) Proof reading and indexing; (23) Editing and abstracting; (24) Library work; (25) *Bookkeeping; (26) *Stenography; (27) *Typewriting.

(c) Division C: (28) Latin, (29) French, (30) German, (31) Italian, (32) Spanish, translating and abstracting scientific articles in these languages.

(d) Two classes of examinations will be provided in each of the subjects (except those marked *) in A and B—a major examination for specialists, and a minor examination for those who take the subject as an adjunct to their specialty.

(e) Applicants must select one of the major subjects in Division A or B as their specialty or major, the examination in which shall count 50.

(f) In addition to the major special subject, applicants *must* be examined on two minor subjects chosen by themselves, one of which must be from Division A and one from Division C, provided that applicants for numbers 3, 6, 14, 15, 16, and 17 above may select the second minor from A or B instead of C. Each of these subjects shall have a maximum value of 10.

(g) Applicants who take vegetable physiology and pathology, horticulture, or forestry as a major subject will be required to take botany as one of the minor subjects; those who take statistics as a major will be required to take physical geography, and those who take meteorology will be required to take physics and physical geography as minors.

(h) Applicants should select two additional minors from Division A, B, or C and as many more as they choose; the maximum mark for one additional minor subject is 5; for two, 10; and not more than 10 for any number of such minor subjects.

(i) Subject to the requirements of paragraphs (f) and (g), additional major subjects will be considered as minor subjects in determining the general average, although the required number of minor subjects has been taken. The major subjects treated as minors will be so arranged, in accordance with the limitations above specified, as to secure the maximum possible general average in connection with each major subject, but no minor subject will be considered in connection with the ratings of a major subject of the same title. This treatment, however, shall not interfere with the consideration of each major subject as a separate examination.

(j) Applicants shall submit a statement of their educational history and opportunities for scientific training and experience, on which they will be given a comparative mark on a basis of 5 as a maximum.

(k) Not more than five hours for the general educational subjects, three for each major, and two for each minor examination will be allowed. More than one day will be required.

(l) The name of each competitor who passes the examination will be entered on the register for the major subject or subjects on which he passes, with the grade obtained on the major and minor subjects combined with the general educational subjects, according to the plan given above.

(m) When a vacancy occurs in a *scientific position in the Department of Agriculture* below the grade of assistant chief or chief, the commission will certify to the Department the highest three names on the scientific register appropriate to the Bureau in which the vacancy exists.

(n) Appointments will be made to the lowest class in the grade, and the higher classes will be filled, as far as practicable, by promotions from the lower classes. It is expected that the positions of assistant chief and chief will be filled by promotion; but in case this is not practicable, certification may be made from existing registers or a special examination may be ordered by the commission.

(o) Vacancies in positions which do not belong to the scientific class will be filled by certification from the general educational examinations, preference being given to the eligibles who have passed in scientific subjects. Those who pass in minor subjects without passing in a major subject may be certified for nonscientific positions, and will be given preference over those who have not passed in any scientific subject. The positions of meat inspector, stock examiner, observer, and assistant microscopist will be filled, as heretofore, by certification from the respective registers pertaining to those subjects, preference being given to persons who have also passed in scientific subjects.*

Sec. 41. Assistant examiner, Patent Office, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, two days of seven hours each. The first three subjects will be given on the first day, the remaining subjects on the

* Subjects marked with a * can be taken only as minors.

second day. Entrance salary, \$1,200. As to applying for this examination, see p. 4. A credit not to exceed 15 per cent, and in no case to raise the competitor's grade above 100 per cent, will be given to competitors who have had actual experience in work similar to that required of assistant examiners in the Patent Office.

Subjects.	Weights.
1. Physics	20
2. Chemistry, inorganic and organic.....	20
3. Mathematics	10
4. Technics	20
5. Mechanical drawings.....	20
6. French or German (translations into English).....	10
Total.....	100

The following questions and tests indicate the general character of the examination:

PHYSICS.

1. A body whose mass is 10 grams, supported by a smooth plane inclined to the horizon at an angle of 30°, is connected by a cord passing over the head of the inclined plane to a body hanging vertically, whose mass is 20 grams. Determine the actual acceleration, and the tension of the string in dynes. ($g = 980$ cm. per sec., per sec. Give work in full.) 2. (a) Explain emission and absorption spectra. (b) What is the cause of the dark lines (Fraunhofer's lines) of the solar spectrum? 3. Give the laws governing the transverse vibration of strings. 4. (a) State the effect of fusion on the volume of solids, and give examples. (b) What is the effect of pressure on the fusing point? 5. Describe and explain Wheatstone's bridge, giving diagram.

CHEMISTRY, INORGANIC AND ORGANIC.—1. State and illustrate the law of periodicity in the properties of elements. 2. How may the molecular weight of a chemical compound that is volatile without decomposition be determined? Explain fully the fundamental principles involved. 3. Describe the preparation and properties of arsenic. Give a test for arsenic. 4. Give the formula of alcohol, aldehyde, and acetic acid. What is the relation between these substances? 5. Write the formula of olefiant gas. Of what is olefiant gas a principal constituent?

MATHEMATICS.

1. Factor $9 - 6x^2 - 4y^2 + 12xy$ and $64x^2 - 12xy - 45y^2$.
2. Given $\begin{cases} (x+y)^2 - z^2 = 117 \\ (x-y)^2 - z^2 = 13 \end{cases}$ to find the values of x and y .
$$\begin{cases} x^2 + 2xy + y^2 - z^2 = 117 \\ x^2 - 2xy + y^2 - z^2 = 13 \end{cases}$$
$$\begin{cases} 4xy = 104 \\ 2x^2 + 2y^2 - 2z^2 = 130 \end{cases}$$
$$\begin{cases} xy = 26 \\ x^2 + y^2 - z^2 = 65 \end{cases}$$
3. Find the equation whose roots are, $0, 3, -1 \pm \sqrt{5}$, and a .
4. Prove that the figure formed by connecting the middle points of a trapezium, taken in order, is a parallelogram, and that its area is one-half the area of trapezium.
5. Determine the number of regular polyhedrons possible.

TECHNICS.

Answer at least five of the following questions:

1. Describe manufacture of kerosene from crude oil.
2. Describe the manufacture of matches.
3. Describe a time lock.
4. (a) What are meant by "eccentricity" and "angle of advance" as applied to valve gearing? (b) Describe an automatic steam governor which acts by varying these quantities.
5. (a) Describe, and illustrate by diagrams, the windings in a series, a shunt, and a compound wound dynamo. (b) State why the last form of winding is better adapted to yield a constant potential under varying loads than the first two forms.
6. Describe the manufacture of water gas. How are the by-products separated?
7. Describe the manufacture and galvanizing of iron wire.
8. Describe the safety devices commonly employed on passenger elevators.
9. Describe the manufacture of bicycle tubing.
10. Describe the construction of a polyphase motor, and explain its mode of operation.

MECHANICAL DRAWINGS.

For this subject the competitor will be given photolithographic copies of drawings of some kind, or portions of machinery, and will be required to describe the construction and operation of the machine represented, naming the different views shown, and the mechanical powers that appear. (The competitor will be instructed as to the name or use of the machine.)

FRENCH OR GERMAN.

The examination is identical in scope for each language, and provides one general and two technical exercises in each language, each of the exercises containing about 125 words. The competitor must select and make translations of any two of the exercises in the language chosen without the aid of a dictionary.

For character of the exercises in French and German see aid examination, Coast and Geodetic Survey, sec. 38.

Sec. 42. Assistant microscopist, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, five hours; entrance salary, \$600. As to applying for this examination, see p. 4.

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The principal stock yards at which assistant microscopists are employed are located in the following places: Boston, Mass.; Buffalo, N. Y.; Cedar Rapids, Iowa; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Indianapolis, Ind.; Kansas City, Kans. and Mo.; Marshalltown, Iowa (work temporarily suspended); Milwaukee, Wis.; National Stock Yards, Ill.; Ottumwa, Iowa; Sioux City, Iowa; South Omaha, Nebr.; South St. Joseph, Mo. It is the practice of the Department to appoint only females to this position, and not to appoint anyone whose eyesight is not in condition to permit of the long-continued use of the microscope, or who is not in good general health; it will therefore be useless for such persons to take this examination. All persons who attain eligible averages in the examination will receive with their notices of standing a blank form of certificate to be filled out by a physician, showing whether their physical condition is such as to meet the requirements specified. The certificate must be executed immediately upon its receipt and returned to the Commission.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	10
2. Arithmetic (third grade, see sec. 37)	10
3. Letter-writing (third grade, see sec. 37)	10
4. Penmanship	10
5. Copying from plain copy (third grade, see sec. 37)	10
6. Practical questions on microscope and experience	50
Total	100

The following questions indicate the general character of the sixth subject:

PRACTICAL QUESTIONS ON MICROSCOPE.

1. Define a microscope. 2. What is meant by a simple microscope? Give an example. 3. Name the mechanical parts of a compound microscope. 4. Name the optical parts of a compound microscope. 5. In examining a specimen, which should be first used, the higher or the lower power lenses, and why? 6. What are the causes which may produce fatigue of the eyes incident upon using the microscope? In order to avoid fatigue, what cautions and care should be observed? 7. What substances are most commonly used to clean the glass surfaces of a microscope? 8. State how "focusing" is accomplished. 9. How should a specimen of meat be prepared for immediate examination? 10. State the exact period or periods, giving dates, during which you have used a simple or a compound microscope, and give the character of the work and the names of the institutions or establishments in which you were engaged. (*In this examination a credit of not to exceed 15 per cent will be given for experience.*)

Sec. 43. Attendant, Government Hospital for the Insane, Departmental Service.—Age limit, 20 years or over; but the Interior Department desires female eligibles who are between the ages of 20 and 30 years, and male eligibles who are between the ages of 20 and 35 years. Application form, 1059. No educational tests are required by the Commission. Applicants are rated on the elements of age, special qualifications and ability, experience, and physical qualifications as shown by the vouchers and sworn statements in the application. If an average of 70 per cent or more is attained by the applicants, they will be eligible for appointment, subject to such further tests as the superintendent may deem necessary to determine whether mental or physical deficiencies exist which would prevent the proper performance of the duties of attendant. These tests will be given without cost. Application blanks may be procured at the Government Hospital for the Insane or at the Civil Service Commission. These blanks when completed should be filed with the secretary of the local board of examiners at the Government Hospital for the Insane.

The salaries during first six months of service are: Male attendants, \$18 per month; female attendants, \$14 per month, with board and lodging.

Sec. 44. Bookkeeper, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, seven hours; entrance salary, from \$720 to \$1,000. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	7.5
2. Practice of bookkeeping	50
3. Arithmetic (first grade, see sec. 35)	12.5
4. Letter-writing (first grade, see sec. 35)	12.5
5. Penmanship	7.5
6. Copying from plain copy (first grade, see sec. 35)	5
7. Copying from rough draft (first grade, see sec. 35)	5
Total	100

The following questions and tests indicate the general character of the seventh subject.

PRACTICE OF BOOKKEEPING.

The first exercise is given a weight of 2, and the second exercise a weight of 1.

FIRST EXERCISE.

Instructions.—On the blanks furnished make the necessary journal entries for the transactions found in the memoranda below. Keep bank account separate from the cash account. Make no daybook entries.

August 2, 1897. James Worley began business with the following resources: Store building and lot, \$4,250; cash in Market Bank \$1,750, in safe \$357.28; Wilton & Co.'s note for \$658.50, dated July 28, due 10 days after date. Liabilities were as follows: Account in favor of John R. Steeves for \$450; note for \$1,893.75 in favor E. P. Coleman, dated July 20, due 60 days after date, with interest at 6 per cent, interest accrued to date, \$4.10.

August 4. Bought with check 10 shares Market Bank stock at 69. (Par value, \$100.)

August 6. Bought of Gruber Bros. merchandise worth \$3,875. Gave in payment check for \$400, balance on account.

August 7. Wilton & Co.'s note for \$658.50 (mentioned in resources) has been protested for nonpayment. Protest fee, \$1.65.

August 10. Sold J. Lovell Newell merchandise valued at \$3,134.27. Received in payment at its present worth my note for \$1,893.75 favor E. P. Coleman (mentioned in liabilities), present worth \$1,900.38, balance on account.

August 12. Drew a sight draft on J. Lovell Newell for \$325 and remitted it to Gruber Bros. on account.

August 13. Sold to Abner Smith 10 shares Market Bank stock at 71 and received his check on Market Bank for amount.

August 14. Received of J. Lovell Newell on account his draft at 30 days' sight on E. P. Coleman for \$360. Presented above draft for acceptance and Coleman has accepted same payable at Market Bank.

August 14. Due W. H. McCord \$50 salary for one-half month. Paid W. H. McCord one-half the amount due him in cash.

August 16. Discounted at 8 per cent my note for \$1,800 given for 60 days at Market Bank and received credit for proceeds. Discount, \$25.20.

SECOND EXERCISE.

From the data given below make out a balance sheet.

On August 31, 1897, James Corbin and John Smith, under the firm name of Corbin & Smith, had on hand as per inventory the following: Merchandise, \$2,405; real estate, \$7,800; stationery, \$12.50. The footings of the accounts in their ledger were as follows:

Debit footings—James Corbin (member of firm), \$260; cash, \$2,875.25; Hartford Bank, \$2,989; real estate, \$7,500; merchandise, \$6,650.80; bills receivable, \$2,689; bills payable, \$975.80; expense, \$167.50; interest and discount, \$40.78; Levi Williams, \$900.

Credit footings—James Corbin (member of firm), \$6,567.44; John Smith (member of firm), \$7,897.50; cash, \$1,297.28; Hartford Bank, \$897.75; merchandise, \$5,489.80; bills receivable, \$1,600; bills payable, \$1,275.80; interest and discount, \$22.65.

Sec. 45. Book-typewriter, Departmental Service.—Age limit, 20 years or over; application form 304; time allowed, six hours. This examination may be taken on the dates and at the places marked (A) or (C) in the schedule, sec. 9; entrance salary from \$600 to \$900. Only those applicants who show in their applications that they have had experience in book-typewriting will be examined. Applicants should also state in their applications whether they are qualified in stenography. The work required in subjects 4, 5, and 6 may be performed upon any kind of book-typewriting machine. Competitors are required to supply themselves with such machines as they desire for use in the examination.

Subjects.	Weight.
1. Arithmetic (first grade, see sec. 35)	5
2. Penmanship	5
3. Letter writing (first grade, see sec. 35)	5
4. Copying from rough draft (first grade, see sec. 35)	30
5. Tabulating (see sec. 86)	25
6. Copying and spacing (see sec. 86)	30
Total	100

For questions and tests indicating the general character of the fifth and sixth subjects, see sec. 86. In rating these subjects accuracy is given a weight of 4 and speed 1.

Sec. 46. Chinese inspector, Departmental Service.—This position will be filled from the first-grade custom-house register in the customs district in which the inspector is to be employed.

Sec. 47. Chinese watchman, Departmental Service.—This position will be filled as the result of registration tests. Persons who desire to become eligible for this position should apply to the Commission, at Washington, D. C., for application (Form 1120),

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which should be properly executed and filed with the Commission. An applicant desiring employment at the port of New York, however, should obtain the application blank (Form 1120) from the secretary of the local board of examiners at the New York custom-house, with whom such application should be filed. Applications may be obtained and filed at any time.

Sec. 48. Classified laborer, Government Hospital for the Insane, Departmental Service.—Age limit, 20 years or over. Application form, 1029. No educational tests are given for this position, but applicants are rated on the elements of age, experience, and physical condition, as shown by the sworn statements and vouchers furnished in the application. For application blank (Form 1029) and information relative to this position applicants should write or apply in person to the secretary of the board of examiners, Government Hospital for the Insane, Washington, D. C.

Sec. 49. Clerk, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, five hours. Entrance salary from \$600 to \$900. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	15
2. Arithmetic (first grade, see sec. 35)	25
3. Letter writing (first grade, see sec. 35)	25
4. Penmanship	15
5. Copying from plain copy (first grade, see sec. 35)	10
6. Copying from rough draft (first grade, see sec. 35)	10
Total	100

Sec. 50. Computer, Supervising Architect's Office, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, two days of seven hours each. Subject 1 will be given on the first day, and subject 2 on the second day. This examination will be given only when eligibles are needed, and will be announced through the public press. Entrance salary \$1,200 to \$1,800.

Subjects.	Weights.
1. Mathematics (including mensuration)	30
2. Knowledge of building materials and construction, and specifications	40
3. Technical education and experience*	30
Total	100

* To be rated on Form 375.

The following questions and tests indicate the general character of the examination:

MATHEMATICS (INCLUDING MENSURATION).

1. The same as question 1 of second subject of junior architectural draftsman. 2. Extract the square root of 492,868.586116. 3. Divide $29\frac{3}{4}$ by $3\frac{1}{8}$, multiply the quotient by 42.8, and add to the product $\frac{1}{5}$ of .1159. 4. Construct graphically an ellipse whose diameters are 4 inches and 3 inches. Show your construction in detail. 5. Given a circle and a straight line which does not touch or cut it; show how to describe a circle which shall touch the given circle externally and the straight line at a given point. Prove your construction. 6. The radius of a circle is 2 feet. Find its circumference and area. Give this answer and those that follow correct to two decimal places. 7. What is the area of a triangle whose sides are, respectively, 3, 5, and 7 feet long? 8. The base of an equilateral triangle is 10 feet; what is its height and area? 9. The chord of a segment of a circle is 8 feet, and its versed sine is 23 feet; find the radius of the circle and the area of the segment. 10. Find the area of a regular octagon of 20 feet side.

KNOWLEDGE OF MATERIALS AND CONSTRUCTION.

1. Of what materials are concrete, lime mortar, and first coat of plaster composed, in what way is each used, and in what proportions are they mixed? 2. What are the characteristics of good common brick, and good building sand, and what tests would you employ to ascertain their quality? 3. (a) In what respects do Rosendale and Portland cements differ? (b) What are the characteristics of first-class pine lumber? 4. Define or illustrate the following terms: (a) Needles; (b) Grout; (c) Fire stops; (d) Templets; (e) Beds and builds; (f) Chases; (g) Bush hammered; (h) Staggered; (i) Crannalled; (k) Briquettes. 5. Give a plan and elevation of the floor framing around a chimney in an outside brick wall, and name the different parts. 6. Describe two different ways of securing ashlar facing to backing. 7. Give a section through a door jamb, and through the style of a veneered door.

Name the different parts and the materials for each. 8. (a) How would you specify joints to be made (1) between cast-iron pipes and (2) between a lead pipe and an iron one? (b) What is the least fall per foot that you would specify for a sewer from house to street? 9. Give sections through the head, sill, and jamb of a sliding sash window frame, in a brick wall, name the different parts, and specify the materials for each part. 10. Name four different bonds employed in brickwork. Make neat pen-and-ink sketch plans and elevations of each.

SPECIFICATIONS.

For this subject the competitor will be given four drawings of the elevations and plans of a Federal building and will be required to write a preliminary block specification, sufficiently detailed to enable a contractor to make a preliminary estimate.

Sec. 51. Draftsmen, ship, Bureau of Construction and Repair, Navy Department, Departmental Service.—The executive order of November 20, 1900, excludes from the requirement of competitive examination by the Civil Service Commission the positions named in the following clause. Any inquiries relative to them should be addressed to the Secretary of the Navy.

"All persons at navy-yards, naval stations, and at private shipbuilding and manufacturing establishments where work is done by contract for the Navy Department, employed as special mechanics and civilian assistant inspectors of work and materials (including ordnance, armor, armor plate, marine engines, hulls, buildings, dredging, etc.). Also all persons employed as ship draftsmen, marine engine and boiler draftsmen, architectural draftsmen, structural-steel-work draftsmen, electrical draftsmen, cartographic draftsmen, and ordnance draftsmen, including assistant or lower-class draftsmen of the various grades. Appointments to these positions shall be made hereafter on tests of fitness prescribed in paragraphs 74 to 83, inclusive, of Navy-Yard Order No. 23, revised. Pending the result of such examination the Secretary of the Navy may appoint to the above positions qualified persons for a period not to exceed thirty days."

Sec. 52. Draftsman examinations, Supervising Architect's Office, Departmental Service.—Age limit, 20 years or over. Application forms, 304 and 375. These examinations will be held only when eligibles are needed. The salaries for these positions are approximately as follows: Junior architectural draftsman, \$600 to \$1,000 per annum; architectural draftsman, \$1,200 to \$2,000 per annum; structural-steel draftsman, \$1,600 per annum; heating and ventilating draftsman, and electrical engineer and draftsman, \$1,200 to \$1,600 per annum. Competitors will be supplied with writing and drawing paper for the examinations, but must bring pen, ink, drawing board, and all other materials likely to be used in the examination.

Below will be found a list of the subjects and weights of the different draftsman examinations applicable to the Supervising Architect's Office:

(a) *Junior architectural draftsman*.—Time allowed, two days of eight hours each. First day, subjects 1, 2, and 3; second day, subject 4.

1. Arithmetic and elementary mathematics.....	10
2. Knowledge of building materials and construction.....	20
3. Free-hand drawing and orthographic projection.....	20
4. Architectural drawing.....	40
5. Technical education and experience*	10

Total 100

(b) *Architectural draftsman*.—Time allowed, three days. First day, subject 1 (six hours); second day, subject 2 (eight hours); third day, subject 3 (six hours).

1. Knowledge of building materials and construction, and specifications.....	25
2. Architectural drawing and design.....	30
3. Free-hand drawing, ornament, and orthographic projection.....	25
4. Technical education and experience*	20

Total 100

(c) *Structural-steel draftsman*.—Time allowed, three days. First day, subject 1 (five hours); second and third days, subject 2 (seven hours each).

1. Pure and applied mathematics	20
2. Knowledge of materials, drawing, and design	60
3. Technical education and experience*	20

Total 100

(d) *Heating and ventilating draftsman*.—Time allowed, two days of seven hours each. First day, subjects 1 and 2; second day, subject 3.

1. Arithmetic and elementary mathematics.....	10
2. Practical questions in heating and ventilating	30
3. Drawing and design.....	30
4. Technical education and experience*	30

Total 100

(e) Electrical engineer and draftsman.—Time allowed, three days of seven hours each. First day, subjects 1 and 2; second and third days, subject 3.	
1. Mathematics	10
2. Theoretical and practical questions in electricity	20
3. Drafting (two sheets)	40
4. Technical education and experience (rated on Form 375).	30
Total	100

The following questions and tests will indicate the general character of the above-named examinations:

(a) *Junior architectural draftsman.* *

* Rated on Form 375.

ELEMENTARY MATHEMATICS.

- This question comprises a test in adding figures crosswise and lengthwise. There are usually three columns of about twelve numbers each to be added. **2.** Multiply 382.58 by $\frac{3}{8}$ of 27.342, and divide the product by $\frac{1}{4}$ of 34.78. (Work by decimals.) **3.** Extract the square root of 492,808.586116.
- Given a straight line of definite length, show how to divide it graphically into four parts proportional in length to the numbers 1, 2, 3, and 5. **5.** Describe a circle through any three given points not in a straight line, and prove your construction.

KNOWLEDGE OF MATERIALS AND CONSTRUCTION.

- What are the characteristics of first-class building brick, best quality lime and building sand?
- Name four different bonds employed in brickwork. Make neat pen-and-ink sketch plans and elevations of each.
- Explain or show by sketch the best method of framing studs and joists on sills, and make, also, a neat sketch section through the sill and the stone foundation of a frame house.
- Make a sketch section and elevation in ink, showing the construction of an ordinary panel door; name all the parts. Draw a sketch about one-sixth full size, showing section through a veneered door.
- Show by a sketch the method of framing a floor around a chimney in an outside brick wall, and name the different parts of the framing.

ORTHOGRAPHIC PROJECTION AND FREE-HAND DRAWING.

A right regular triangular prism, whose height is $2\frac{1}{2}$ inches, and the edge of whose ends is $1\frac{1}{4}$ inches, stands on one end as a base, with two edges of base equally inclined to the vertical plane. The center of the base is $1\frac{1}{2}$ inches from the vertical plane.

- Draw plan and elevation, and show true form of section made by a cutting plane at right angles to the vertical plane, at 45° to the horizontal plane, and bisecting the axis of the pyramid.
- Draw the development of the lower part of the prism.
- Make free-hand drawing in pencil of sketch of ornament furnished, enlarging to twice the size there shown.
- Make free-hand drawing in ink of the study for house, enlarging to twice the size there shown.

ARCHITECTURAL DRAWING.

- Name the five orders of architecture and the principal parts into which an order is divided. **2.** Draw, in pencil, a Roman Doric cap, using 2 inches as a module. **3.** The plan given on sheet 5d is to $\frac{1}{12}$ -inch scale. Enlarge to $\frac{1}{6}$ -inch scale and finish in pencil. **4.** Make a copy of the elevation given on the same sheet, in pencil. Use the same scale as in copy. Finish one bay complete. **5.** Make a tracing, in ink, of your drawing furnished in answer to 4.

NOTE.—The drawing given in connection with questions 3, 4, and 5 will be a simple plan and elevation of a small public building.

(b) *Architectural draftsman.*

KNOWLEDGE OF MATERIALS AND CONSTRUCTION.

- Give, to about 1-inch scale, a sketch plan and section of a fireplace with hearth and trimmer arch, the opening to be 2 feet 6 inc es high, 3 feet wide, and 16 inches deep. **2.** Give two sketch plans of a brick pier between two windows, and faced with ashlar, showing the bond of the ashlar, and the anchors and cramps required to bond the work. **3.** What is "slow-burning construction?" Give a pen-and-ink sketch of the post and girder connections and of the floor construction in a building of this type. **4.** Of what materials are (1) concrete, (2) lime mortar, (3) cement mortar, (4) first coat of plaster composed; in what way is each used, and in what proportions are the materials mixed in each case? **5.** What are the characteristics of good common brick and good building sand, and what tests would you employ to ascertain their quality? In what respects do Rosendale and Portland cements differ? **6.** Give sections through the head, sill, and jamb of a sliding-sash window frame, name the different parts, and specify the material of which each part should be made. **7.** What are the characteristics of first-class yellow-pine lumber? Define wet rot and dry rot, and state how each is prevented. **8.** How would you specify a joint to be made between (a) cast-iron pipes and (b) between a cast-iron pipe and a lead one? What minimum fall would you allow in a sewer from house to street? **9.** Show, by a neat pen-and-ink sketch, the proper method of arranging a ventilated running trap outside the wall of a building on the line of pipe connecting with sewer. **10.** Make a neat pen-and-ink sketch showing longitudinal section through string of an iron staircase with marble treads; also show a section of gallery casing in a fireproof building, the floor to be of marble.

The drawings required to be made under instructions given above represent elevation and first-floor plan of a federal building. Stone facing. Fireproof construction. **1.** Give the headings of the principal subjects to be covered in a specification for such a building. **2.** Give a short outline draft of a specification for the cut-stone work. **3.** A short outline draft for the brickwork. **4.** A short outline draft for the carpenter work. **5.** A short outline draft for the painting and glazing.

DRAWING AND DESIGN.

1. Name and describe in outline the Greek and Roman orders, mentioning the principal points in which they differ. **2.** Draw, in pencil, with a module of one-half inch, the Corinthian order, and give the proper technical name for each of its parts and members. **3.** Lay out, in pencil, to $\frac{1}{4}$ -inch scale, the sketch plan shown on sheet 4a, and figure your drawing fully. **4.** Lay out the elevation, in pencil, to the same scale, finish one-half of your drawing, and figure the openings. **5.** Make a tracing in ink, on linen, of your drawings in answer to questions 3 and 4, and letter the tracing neatly.

For questions 3, 4, and 5 a rough sketch plan and elevation of a public building was given.

FREE-HAND DRAWING AND ORTHOGRAPHIC PROJECTION.

Give finished pencil sketches of two of the following-named styles of ornament, and indicate your selection: **1.** Greek or Roman. (Select one.) **2.** Gothic or Renaissance. (Select one.) **A** right, regular octagonal prism, whose height is 3 inches and the edge of whose ends is 1 inch, stands on an edge of one end on the horizontal plane, with its axis parallel to the vertical plane, at 60° to the horizontal plane and $\frac{1}{4}$ inches from the latter. The edge on a horizontal plane is inclined at 60° to the vertical plane. **3.** Draw plan and elevation. **4.** Show true form of section made by a horizontal cutting plane which bisects the axis, and develop the lower part of the prism. **5.** An octagonal column, 3 inches high, and the diagonals of whose base are $2\frac{1}{2}$ inches, stands vertical and has a plinth 4 inches square and 1 inch thick lying flat on top. One face of the plinth and one of the column show full in elevation. Show exact form of shadow cast by plinth on column by a direct light falling at 45° , as is usual in drawings.

(c) Structural-steel draftsman.

HIGHER MATHEMATICS AND MECHANICS.

6. Assuming the formula for determining the solidity of a cone as proved, show that the volumes of two similar cones of revolution are to each other as the cubes of their heights. **7.** Given two adjacent sides, a and b , of a triangle, and also the included angle C , show how to solve the triangle. **8.** Find the points where the straight line $y = -2x + a$ cuts the parabola $y^2 = 4ax$, and the length of the part intercepted. **9.** Given $x^2 + y^2 - 3axy = c$; find $\frac{dy}{dx}$. **10.** Integrate $\frac{3x-5}{x^2-6x+8} dx$. **11.** A $20''$ I beam, 70 pounds per foot, has $8'' \times 4''$ plate riveted on the bottom flange. Find the position of the center of gravity, the moment of inertia, and the radius of gyration of the combined section. (Moment of inertia for $20''$ I beam 70 pounds per foot = 1,220.) **12.** A steel plate girder 30 feet long and 3 feet deep carries a center load of 30,000 pounds and a distributed load of 2,000 pounds per foot. If the maximum strain on extreme fiber is 15,000 pounds what is the moment of inertia of the section? **13.** A beam 25 feet long has a load of 10,000 pounds at 5 feet from one end and a distributed load of 1,000 pounds per foot. What is the maximum bending moment and where does it occur? **14.** State the theorem of (a) the parallelogram of forces; (b) the parallelopiped of forces, and (c) the resultant of any number of parallel forces. **15.** Three forces, A , B , and C , are in equilibrium. Having given the magnitude and direction of A , the magnitude of B , and the direction of C , determine the magnitude of C and the direction of B . When is the solution impossible?

KNOWLEDGE OF MATERIALS, DRAWING, AND DESIGN.

(Use of slide-rule is permitted in computations).

1. Figure the strains on the members of the truss shown below. Assume wind pressure as 40 pounds per square foot horizontal; snow, roof, and covering as 40 pounds per horizontal square foot. Truss is fixed at A and rests on steel built column 20 feet high; free at B, resting on rollers on brick wall. Distance between trusses is 10 feet. To prevent bending of column a knee brace is to be provided. Distance from foot of column to knee brace is 12 feet. Show all your calculations. (A Fink roof truss 100 foot span and 25 foot rise was given.) **2.** Show, in pencil, details at A and B, and of foundation of column, so that maximum pressure on subsoil may not exceed 1,000 pounds per square foot. Find, also, strain in knee brace and bending moment on column. **3.** (a) Describe briefly the process to which ore is subjected before it is suitable for structural cast-iron work. (b) Name and describe, in detail, one method of making steel. **4.** A floor space, 25 by 40 feet clear, is to be covered with a steel beam and girder floor without columns. The total floor load, including weight of floor, is 400 pounds per square foot. Allowing maximum strain on fibers of 15,000 pounds per square inch, show by a neat pen-and-ink figured sketch the most economical and suitable arrangement. Add written notes when necessary. The moment of inertia of 10-inch I beam 25 pounds per foot is equal to 122.5; 10-inch I beam 33 pounds per foot is equal to 161.3; 12-inch I beam 37 pounds per foot is equal to 222.3; 12-inch I beam 40 pounds per foot is equal to 281.3; 15-inch I beam 41 pounds per foot is equal to 424.1; 15-inch I beam 50 pounds per foot is equal to 529.7; 15-inch I beam 60 pounds per foot is equal to 644; 15-inch I beam 80 pounds per foot is equal to 785.

5. A plate girder 27 feet long and 3 feet deep carries a load of 3,000 pounds per foot and a concentrated load of 50,000 pounds at 6 feet from each end. Proportion the girder to sustain this total load, allowing maximum flange strain of 15,000 pounds per square inch, and shear in web and rivets of 8,000 pounds. Show all your calculations. **6.** Make detail drawings, in pencil, of the girder to three-fourths-inch scale. Figure all dimensions and rivet spacing. **7.** A column carries, at first-floor level, four beams. The beams are arranged and transmit to the column the loads, as shown on the sketch below. Length of column is 13 feet from base to top of beam at first floor and 25 feet from top of beam at first floor to top of beam at second floor. The column rests on a concrete base and is to be built of plates and angles. Design the column and all connections. Assume strain on column as 10,000 pounds per square inch, shearing value seven-eighths-inch rivets as 6,000 pounds, and bearing value of seven-eighths-inch rivets as 15,000 pounds per linear inch of bearing. Allow pressure on concrete base of 8 tons per square foot. Show all your calculations. **8.** Make a drawing, in pencil, of the column, showing all connections and base.

NOTE.—For question 7 the column carries, at first-floor level, four beams at right angles, in pairs, and unequally loaded; at second-floor level three beams, unequally loaded and at 120° to each other, are carried.

(d) *Heating and ventilating draftsman.*—First subject same as in junior architectural draftsman.

PRACTICAL KNOWLEDGE OF HEATING AND VENTILATION.

1. Name the various means employed for warming buildings and briefly describe the principal systems.
2. Describe the construction of the usual style of direct radiators used for low pressure steam heating.
3. State the difference between direct steam radiators and those used for direct hot water heating.
4. Where should automatic air valve be located on a direct steam radiator, and also on an indirect steam radiator?
5. (a) How should flow and return pipes of a low pressure steam heating apparatus be graded? (b) How should similar pipes of a low temperature hot water heating apparatus be graded? (c) How is air expelled from a hot water heating system?
6. Explain the use of eccentric fittings in the pipe system of a steam heating apparatus.
7. What is the relative position of outlets of a 6 by 4 by 2 inch eccentric "T" placed in the main flow pipe of (a) a low pressure steam heating apparatus, and (b) a low temperature hot water heating apparatus?
8. State how globe valves should be placed on horizontal steam flow pipes.
9. Explain the use and operation of automatic air valves on steam radiators.
10. To warm and ventilate a building it is necessary to introduce 570,000 cubic feet of fresh air per hour, which amount of air is to be heated from plus 20° to 110° F. by indirect radiation. The indirect radiation to be used will emit 470 heat units per square foot per hour. How many square feet of indirect radiation will be required?

DRAWING AND DESIGN.

1. (a) Illustrate by free-hand sketch how drip pipe from a vertical steam flow riser is run and connected to the corresponding return riser, both flow and return risers being valved. (b) Make a free-hand section of a 2-inch globe valve. Sketch to be made approximately full size and clearly show construction of valve.
2. Draw three-fourths inch scale section of an indirect radiator of a low-pressure steam heating apparatus, located in a brick chamber in the basement of a building. The indirect radiator to be located and shown in outline only; but connections to same, including valves, cold-air supply duct with damper, hot-air exit flue, construction of ceiling of chamber, manholes, etc., must all be fully illustrated. Drawing to be clear and distinct and to be made in pencil only.
3. Make finished ink drawing, side and end elevation and section through trench and part section of wrought-iron blow-off tank and pipe connections to same, all as illustrated by sketch furnished. End elevation to be taken from line a b; scale to be $\frac{1}{4}$ inch to 1 foot 0 inch.

(e) *Electrical engineer and draftsman.*—First subject same as in junior architectural draftsman. Specimen questions in second and third subjects can not be furnished at this time.

Sec. 53. Elevator conductor, Departmental Service.—Age limit, 20 years or over; application form, 1093; time allowed, three hours. This examination may be taken on the dates and at the places marked A, B, or C in the schedule, sec. 9. Entrance salary, from \$360 to \$720.

Subjects.	Weights.
1. Spelling (third grade, see sec. 35).....	16
2. Arithmetic (third grade, see sec. 35).....	16
3. Letter writing (third grade, see sec. 35).....	16
4. Penmanship	16
5. Copying from plain copy (third grade, see sec. 35).....	16
6. Experience*	20
Total	100

* Credit will be given for experience as elevator conductor, machinist, engineer, motorman, or car conductor.

Sec. 54. Engineer (steam), Departmental Service.—Age limit, 20 years or over; application form, 1093; no educational tests are required. Applicants are rated upon the elements of age, experience, character as a workman, and physical ability, as shown by the vouchers and sworn statements in the application. For method of rating see sec. 81.

Sec. 55. Engraver, script and square letter, Bureau of Engraving and Printing.—Age limit, 20 years or over. Application form, 304 and special forms. No educational tests are required. Applicants are rated upon the application forms and upon the character and degree of excellence of the samples of engraving submitted with their applications. Applications for these positions will be received at any time, and applicants will be rated and the names of those eligible will be entered on the register regularly once a quarter, or more frequently whenever the need of eligibles so requires; a permanent register of eligibles to be thus maintained from which certification can be made as vacancies occur.

Sec. 56. Fireman, Departmental Service.—Age limit, 20 years or over; application form, 1093; no educational tests are required. Applicants are rated upon the elements of age, experience, character as a workman, and physical ability, as shown by the vouchers and sworn statements in the application. For method of rating see sec. 84.

Sec. 57. Fish-culturist, Fish Commission, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, six and one-half hours. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	5
2. Arithmetic (first grade, see sec. 35)	5
3. Letter-writing (first grade, see sec. 35)	5
4. Penmanship	5
5. Copying from plain copy (first grade, see sec. 35)	5
6. Copying from rough draft (first grade, see sec. 35)	5
7. Geography	10
8. Fish culture*	60
Total	100

* There are four classes of examinations under this subject, viz: (1) Pond culture operations; (2) salmon, trout, and whitefish operations; (3) marine operations; (4) shad and pike perch operations. It is optional with the competitor to take more than one of these classes of examinations. In the event that more than one class is taken an additional hour will be allowed for each class taken after the first. Separate lists of eligibles will be made up for each class of tests under the subject of fish culture, and eligibles will be entered upon such lists as the examinations they have taken indicate.

The following questions and tests indicate the general character of the seventh and eighth subjects:

GEOGRAPHY.

1. Name States as follows: Two that border on both the Ohio and Mississippi rivers; two that border on both the Pacific Ocean and Columbia River; two that border on both the Atlantic Ocean and Potomac River; two that border on Lake Champlain; two that border on both the Gulf of Mexico and Mississippi River. 2. Name the largest lake port or seaport in each of the following-named States, and give the body of water on which each port named is situated: Minnesota, Pennsylvania, Texas, California, Maine. 3. Name the river or body of water into which each of the following-named rivers flows: Niagara, Arkansas, Connecticut, Detroit, Lewis (or Snake). 4. Name the river or body of water on which each of the following-named prominent cities is situated: Memphis, Evansville, Hartford, Council Bluffs, Toledo, Milwaukee, Seattle, Mobile, Buffalo, Trenton. 5. Name five States that border on the Mississippi River, and give the capital of each State required.

1. POND CULTURE.

1. Name the fishes cultivated in ponds in the United States (eggs not artificially impregnated). 2. (a) Give the principal natural enemies of pond fishes. (b) Of what advantages are water plants in ponds? 3. State the spawning season and habits of any important pond fish, the relative number and character of the eggs, and the period of incubation. 4. What attention from the fish-culturist is required by (1) the eggs and (2) the newly hatched young of any given pond fish? 5. Discuss the artificial food and feeding of pond fishes.

2. PROPAGATION OF SALMONIDÆ.

1. (a) Name six native members of the salmon family artificially propagated in the United States. (b) Name two introduced fish of the same family that are cultivated. 2. Give the natural spawning season, habits, and grounds of any important species of this group. 3. Describe the methods of obtaining and fertilizing the eggs of any fish of this family. 4. Describe in detail the form and operation of the apparatus used in hatching the eggs of the foregoing species. 5. (a) What is the average time required for the hatching of the eggs at a given temperature? (b) How are its eggs packed for shipment?

3. MARINE OPERATIONS.

1. What are the spawning seasons of cod and lobster on the United States coast? 2. Describe the methods of taking, impregnating, and shipping cod eggs from field stations to the hatchery. 3. Describe in detail the apparatus used in hatching cod and flatfish eggs. 4. What is the geographic range of the mackerel on the coast of North America? 5. At what season of the year do lobsters spawn, and for how long a period do they carry their eggs?

4. PROPAGATION OF SHAD AND PIKE PERCH.

1. Name ten important shad streams of the United States. 2. (a) What is the spawning season of the shad in (1) North Carolina, (2) New Jersey, (3) Maine? (b) At what time of day do shad usually spawn? 3. State the approximate size and the character of the shad egg and the average number of eggs yielded per fish. 4. In what range of temperature does the shad spawn? What is the average hatching period at a given temperature? 5. Describe in detail (1) the methods employed in taking and fertilizing shad eggs, and (2) the apparatus and (3) methods used in hatching.

NOTE.—Questions relative to pike perch operations can not be furnished at this time.

Sec. 58. Guard, United States penitentiary.—Age limit, 20 years or over; but the Department of Justice desires eligibles who are between the ages of 22 and 50 years; application forms, 304 and 1036; time allowed, three hours. Entrance salary, \$60 per month. As to applying for this examination, see p. 4. The Department desires men who are not less than 5 feet 9 inches in height, and who weigh not less than 150 pounds, who are possessed of sound physical health, good moral character and undoubted honesty, great personal courage, a kindly but firm disposition, sound judgment and discretion, an inclination to faithfully carry out the orders of a superior, a personality and characteristics which would command respect and obedience of persons in their custody, and a temperament calculated to gain the confi-

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dence and friendship of prisoners in their charge. Those who are not shown by the evidence presented to possess these preliminary qualifications will not be admitted to the written examination.

Subjects.	Weights.
Spelling (third grade, see sec. 37).....	14
Arithmetic (third grade, see sec. 37).....	14
Letter writing (third grade, see sec. 37).....	14
Penmanship	14
Copying from plain copy (third grade, see sec. 37).....	14
Experience and practical fitness (rated on Form 1036).....	30
Total	100

Sec. 59. Immigrant inspector, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, six hours. This examination will be given only when eligibles are needed, and will be announced through the public press.

Subjects.	Weights.
1. Spelling (second grade, see sec. 36).....	10
2. Arithmetic (second grade, see sec. 36).....	10
3. Letter writing (second grade, see sec. 36).....	10
4. Penmanship.....	10
5. Copying from plain copy (second grade, see sec. 36).....	10
6. Practical questions*	50
Total	100

* No specimen questions can be furnished. The scope of this subject, however, includes the general duties of immigrant inspectors and the provisions of the immigration laws.

Sec. 60. Inspector and assistant inspector (meat inspector), Bureau of Animal Industry, Agricultural Department, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, seven hours. This examination may be taken on the date and at the places marked D in the schedule, sec. 9. Entrance salary, \$1,200 to \$1,400 per annum. Applicants for this examination must be graduates of veterinary colleges. Those graduating prior to or during 1897 will be accepted if from colleges having a course of not less than two years in veterinary science, while applicants graduating since that time must be from colleges having a course of not less than three years. These facts must be shown in the application. Applications received from persons who are not such graduates will be disapproved.

The number of eligibles for these positions has not been sufficient to meet the needs of the service.

Subjects.	Weights.
1. Spelling (second grade, see sec. 36).....	5
2. Arithmetic (second grade, see sec. 36).....	5
3. Letter writing (second grade, see sec. 36).....	5
4. Penmanship.....	5
5. Copying from plain copy (second grade, see sec. 36).....	5
6. Veterinary anatomy and physiology	10
7. Veterinary pathology	25
8. Meat inspection.....	40
Total	100

The following questions and tests will indicate the general character of the sixth, seventh, and eighth subjects:

VETERINARY ANATOMY AND PHYSIOLOGY.

1. Point out the differential anatomical characteristics in the liver and also in the kidney of (a) cattle, (b) sheep, (c) swine. 2. Describe the lymphatic system and give its functions.

VETERINARY PATHOLOGY.

1. What diseases may attack the bones of food-producing animals? 2. What two important diseases of cattle are caused by fungi? Give the pathology characteristic of each. 3. Name two important animal parasites found in cattle and the diseases produced by them in cattle; also two important animal parasites found in swine and the diseases produced by them in swine. Give the pathology in each one named. 4. Of what diseases or conditions of cattle is jaundice a symptom? 5. What is anaemia? In what diseases of sheep does this condition commonly occur?

MEAT INSPECTION.

1. What are the symptoms of rabies in bovine animals? With what diseases may rabies be confounded? **2.** How may tuberculosis be detected (a) in the living animal, (b) by examination of the carcass, excluding the viscera? **3.** Describe the appearance in the carcass, excluding the viscera, by which (a) Texas fever, (b) hog cholera, (c) anthrax, may be detected. For what diseases (one for each) may they be mistaken? **4.** Name some of the conditions and also the specific infectious diseases which may cause haemoglobinuria. How could a specific disease be definitely determined as a cause? **5.** Enumerate the symptoms of parturient fever. State whether the meat of a cow thus affected is fit for food, and the reasons for the answer given.

See. 61. Law clerk, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, two days of five hours each. This examination will be held only when eligibles are needed.

From this examination certification will be made to fill vacancies in the lower grade law positions, and also, upon request of the appointing officer, to fill vacancies in clerical positions in which legal qualifications are desirable, with the expectation that persons appointed from this register will be eligible for promotion to the higher grade law positions upon passing a supplemental examination in the law peculiar to the administration of the office in which such positions may be. The Commission can not undertake to say how generally this policy of filling clerical positions from the law-clerk register will be adopted, but it is expected that it will be followed to some extent, at least, so that those who pass the examination will be eligible to appointment to low-salaried positions, with a prospect of promotion to higher grade law positions.

Whenever a vacancy occurs in a higher grade law position, which is not filled by promotion, transfer, or reinstatement, those whose names are on the law-clerk register will be notified to appear, if they so desire, for a supplemental examination in the law applicable to the office in which the vacancy exists, upon passing which they will become eligible for appointment to such vacancy.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	5
2. Arithmetic (first grade, see sec. 35).....	5
3. Letter writing (first grade, see sec. 35)	5
4. Penmanship	5
5. Copying from plain copy (first grade, see sec. 35)	5
6. Copying from rough draft (first grade, see sec. 35)	5
7. Law.....	70
Total	100

This examination includes practical questions upon different features in nearly the entire field of law, with the exception of technical rules of practice and statutory laws not common to all the States. In difficulty it will be about equal to an average examination for admission to the bar.

The following questions indicate the general character of the seventh subject:

LAW.

1. (a) When one statute is repealed by another, of what effect, if any, is the repeal of the repealing statute? (b) State three leading principles governing the construction of statutes. **2.** (a) What power is granted by the Constitution as to the creation of United States inferior courts? To whom is it granted? (b) How far has the power called for in (a) been exercised, and which was the last instance of its exercise? **3.** (a) If part of a law is unconstitutional, how are the other parts affected? (b) Under the judicial construction placed upon the *habeas corpus* clause of the Constitution, in whom only is the right to suspend the writ? **4.** (a) State the essential distinction between common law and equity. (b) Name eight of the enumerated powers of Congress. **5.** (a) Show by means of examples the distinction between competency of evidence and sufficiency of evidence, and state by whom each is determined. (b) What is the rule as to hearsay evidence? Name two reasons for the rule. **6.** (a) Explain the doctrine of *res gestae*. Illustrate. (b) Name four classes of matters of which the courts take judicial notice.

7. (a) What is the general rule as to a party's impeaching his own witness? Give the reason for the rule. (b) State whether or not in general a witness may be questioned as to collateral facts, and give the general rule as to the production of testimony which governs in such a case. **8.** (a) State briefly the conditions which gave rise to courts of equity. (b) A testator died, never having had but three sons, John, William, and James. He left his entire estate to his sons, naming them in his will as John, William, and Frederick. How should the will be construed? What is the rule of law as to a patent ambiguity? What as to a latent ambiguity? **9.** (a) Agrees to sell B certain goods and passes the title to them. The goods can not be duplicated and are of peculiar value to B. A refuses to deliver the goods. What remedy, if any, has B at law? What at equity? Name one ground of equitable jurisdiction. (b) When, if ever, will courts of equity entertain the question of inadequacy of consideration? **10.** (a) In what respect does a mortgage differ from a deed, and what is meant by an equity of redemption? (b) What underlying principle requires that a deed be recorded? Name an instance in which a duly executed and recorded deed would be void, although the title of record was in the grantor at the time of the delivery of the deed. **11.** (a) What is the paramount principle observed by courts in construing a will, and what portion of a will is construed under the law, and what portion under equity? (b) How, and by whom, is the estate of a person administered who dies intestate? What is meant by widow's right of dower.

12. (a) A, who is divorced, is prohibited in the decree from remarrying. He subsequently marries in another State. Under what circumstances, if any, is this marriage good? (b) Who is the natural guardian of a minor, and over what does such guardianship extend? What is guardianship ad litem?

13. (a) What invariable rule may be applied to determine whether or not a legal partnership has been created? State a case, and apply the rule. (b) How far does the act of an officer of a corporation bind the shareholders? Upon what general principle of law does the act of one partner bind the other partners? **14.** (a) Name four essentials to a valid contract. (b) Who, if anyone, may dispute the consideration of a contract under seal? **15.** (a) Name three kinds of bailment. Explain a common carrier's liability in respect to goods, and his liability in respect to persons. (b) A, a prisoner, has reason to be apprehensive of ill treatment from the sheriff, and promises in writing, under seal, to pay the sheriff \$100 if he will release him. The prisoner is duly tried and the sheriff releases him by order of the court. A refuses to pay. Can the sheriff maintain suit? Give in full the reasons of your answer.

16. (a) A fire at B a pistol, which, unknown to B but known to A, contains only a blank cartridge. The instant following B fatally shoots A. In a trial for manslaughter, what, if any, good defense may B have? Give reason for your answer. (b) By what general rule should the jury be governed in criminal cases? A prisoner is brought to trial under a statute which declares his act to be a crime, but fails to fix penalty therefor. What should be the action of the trial court?

17. (a) When, if ever, does the judgment of a court bind persons outside of its jurisdiction? (b) Under what circumstances may a cause of action arising and commenced within the jurisdiction of one court be originally tried by a court of another jurisdiction within the same State? **18.** (a) Explain and illustrate the distinction between guaranty and surety. (b) Upon a note payable on demand and containing no interest clause, when does the statute of limitation and when does interest begin to run? **19.** (a) Explain in full what is meant by exemplary damages. Illustrate. (b) A person hires a horse to go to certain place, but goes to another place. The horse is accidentally injured, and the bailee refuses to pay for the hire of the horse. Of what offense is the bailee guilty? What is the full recourse of the bailor? **20.** (a) Under the law of pleading, what, in full, is meant by a variance? What is its effect? Illustrate. (b) Does a demurrer raise a question of law or of fact? By whom is it heard? What is the effect of a demurrer if sustained? Illustrate.

Sec. 62. Magnetic Observer, Coast and Geodetic Survey.—Age limit, 20 years or over; application forms, 304 and 375. No educational examination for these positions will be given, but applicants will be graded upon their training and experience as set forth by them in the application forms. In the prosecution of the general magnetic survey of the United States and countries under its jurisdiction by the Coast and Geodetic Survey it will be necessary at times, and especially during the summer months, to employ temporarily and for short periods a number of men of the requisite scientific training. The time when and the place where such persons are to be employed can not be definitely stated. Persons are desired who have had experience in a university or college as professor, assistant professor, teacher, or tutor in physics or allied sciences; or students who have had not less than two years' work in physics or allied sciences, including laboratory practice. The salaries for these positions will range from \$30 to \$75 a month, according to the character of the work and the qualifications of the applicant; and in exceptional cases, where the person employed has had repeated experience in magnetic work, the salary may reach \$100 per month.

Sec. 63. Map printer, Departmental Service.—Age limit, 20 years or over; application form, 1093; time allowed, four hours. This examination will be given only when eligibles are needed and will be announced through the public press.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	5
2. Arithmetic (third grade, see sec. 37)	5
3. Letter writing (third grade, see sec. 37)	5
4. Penmanship	5
5. Copying from plain copy (third grade, see sec. 37)	5
6. Practical questions	40
7. Experience*	35
Total.....	100

* Credit will be given in this subject for experience in map printing. No specimen practical questions can be furnished.

Sec. 64. Mechanical draftsman, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, three days. This examination will be given only when eligibles are needed and will be announced through the public press.

Subjects.	Weights.
1. Letter writing	5
2. Mathematics	15
3. Materials	15
4. Calculations	20
5. Drafting	25
6. Training and experience	20
Total.....	100

Sec. 65. Messenger, Departmental Service.—Age limit, 18 years or over; application form, 304; time allowed, three hours. Entrance salary, \$360 to \$720. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	20
2. Arithmetic (third grade, see sec. 37)	20
3. Letter-writing (third grade, see sec. 37)	20
4. Penmanship	20
5. Copying from plain copy (third grade, see sec. 37)	20
Total	100

Sec. 66. Messenger-boy, Departmental Service.—Age limit, 14 to 20 years; but the Department of Agriculture desires eligibles for messenger-boy in the Weather Bureau between the ages of 16 and 20 years; application form, 304; time allowed, three hours. Entrance salary, \$300. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	20
2. Arithmetic (third grade, see sec. 37)	20
3. Letter writing (third grade, see sec. 37)	20
4. Penmanship	20
5. Copying from plain copy (third grade, see sec. 37)	20
Total	100

NOTE.—Vacancies in the positions of messengers or map distributors employed at the various Weather Bureau stations throughout the country will hereafter be filled from the register of eligibles established as a result of this examination.

Sec. 67. Observer, Departmental Service.—Age limit, 18 to 30 years; application form, 304; time allowed, eight hours. Entrance salary, \$840 per annum. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	10
2. Meteorology *	30
3. Penmanship	5
4. English composition	25
5. Arithmetic (sheet 2, first grade, see sec. 35)	10
6. Copying from rough draft (first grade, see sec. 35)	10
7. Geography	5
8. Algebra	5
Total	100

* Questions under this subject will be confined to the subject-matter contained in Waldo's Elementary Meteorology.

The following questions and tests indicate the general character of the second, seventh, and eighth subjects.

METEOROLOGY.

1. Give the composition of the atmosphere. 2. Why are barometric observations corrected for temperature and elevation? 3. How is the force and velocity of the wind measured? 4. Give the conditions favorable for the formation of dew and frost. 5. What is understood by the term "cyclone"? Make a diagram showing direction of surface winds within its area. 6. Give the causes of rainfall. 7. What are clouds? Into what principal classes are they divided? 8. What are the principal steps in the construction of a standard thermometer? 9. What is a river gauge? Explain its construction. 10. How is atmospheric pressure measured? Explain the construction of the instrument.

ENGLISH COMPOSITION.

Write an essay of not less than 300 words on the relative climatic advantages of the different portions of the United States from a sanitary point of view, and also as regards crop productions.

GEOGRAPHY.

1. Name two States which border Massachusetts on the south; two Territories which border on Texas; two States which border Montana on the south; two States which border Illinois on the west; two States which border Pennsylvania on the south. 2. In what State is situated (wholly or in part)

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each of the following named: Wahsatch Mountains, Schoodic Lakes, Ozark Mountains, Mount Baker, Seneca Lake, Lake Okeechobee, Mount Mitchell, Lake of the Woods, Mount Katahdin, Togare Lake. **3.** Name the capital and the largest city of each of the following-named States: Michigan, New Hampshire, South Carolina, South Dakota, Kentucky. **4.** Name a river and a large body of water [not a river] which border on each of the following-named States: New Jersey, Vermont, Indiana, Louisiana, Oregon. **5.** In what State is each of the following-named prominent cities: Rockford, Butte, Lynn, Utica, Macon, Fond du Lac, Ogden, San Antonio, Sandusky, Scranton.

ALGEBRA.

Question 1. Divide $a^4 - 4a^3x + 6a^2x^2 - 4ax^3 + x^4$ by $a^2 - 2ax + x^2$

Question 2. Find the value of x in the following equation:

$$\frac{7x - 6}{35} = \frac{x - 5}{6x - 101} = \frac{x}{5}$$

Question 3. Find the value of x in the following equation:

$$\sqrt{128x} - \sqrt{72x} + \sqrt{162x} = 132$$

Question 4. Find two numbers such that the difference of their squares shall be 552 and the sum of the numbers 46. (Show clearly the method of solution by algebra.)

Question 5. Find two numbers the greater of which shall be to the less as their sum to 42 and as their difference to 6. (Show clearly the method of solution by algebra.)

Sec. 68. Plate printer, Bureau of Engraving and Printing.—Age limit, 20 years or over; application form, 1080. No educational tests are required. Applicants are rated on the elements of age, character as a workman, experience, and physical condition as shown by the vouchers and sworn statements in the application. Applicants for this examination will be required to show that they have served as apprentice for at least four years before their applications will be accepted. Applications may be filed at any time.

Sec. 69. Printer's assistant, Bureau of Engraving and Printing, Departmental Service.—Age limit, 18 years or over; application form, 304; time allowed, three hours. This examination is for females only and may be taken only at Washington, D. C. Applications must be on file before the hour of closing business December 31. Salary, \$1.25 per diem.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	10
2. Arithmetic (third grade, see sec. 37)	10
3. Letter writing (third grade, see sec. 37)	10
4. Penmanship	10
5. Copying from plain copy (third grade, see sec. 37)	10
6. Physical qualifications*	50
Total	100

* The physical examination required under the sixth subject will be conducted by a medical board to be composed of one representative from the Commission, one from the Bureau of Engraving and Printing, and one from the Treasury Department proper. Applicants will be notified when to appear for the physical examination, and those who pass in that examination will be notified when to appear for the educational examination.

Sec. 70. Post-office Inspector, Post-Office Department.—Age limit, 20 years or over; time allowed, seven and one-half hours. This examination is not at present given as an open competitive examination, as it is the practice of the Department to fill all vacancies in this position by the promotion or transfer of persons already in the service upon noncompetitive examination. All inquiries in reference to this position should therefore be addressed to the Postmaster-General. No specimen questions can be furnished.

Subjects.	Weights.
1. Spelling (first grade, sec. 35)	10
2. Arithmetic (first grade, sec. 35)	10
3. Letter writing (first grade, sec. 35)	10
4. Penmanship	10
5. Copying from plain copy (first grade, see sec. 35)	10
6. Writing reports	10
7. Elements of bookkeeping and of accounts	10
8. Geography, Constitution, and postal laws and regulations of the United States	20
9. Descriptions of persons	10
Total	100

Sec. 71. Promotion, clerk, Departmental Service.—Age limit, 20 years or over; application forms, 372 for apportioned service, 304 and 372 for the nonapportioned service; time limit, five hours. This examination may be taken on the dates and at the places marked A, B, or C in the schedule, and at Washington, D. C., in the spring and fall. Only those persons who have occupied classified positions in the departments at Washington below the grade of clerk for at least two years entrance to which is through educational examinations may be examined for promotion to clerical positions in their respective offices in the Departmental Service at Washington. Each application for promotion must bear the certificate and be accompanied by the efficiency rating of the applicant from the head or chief clerk of the department in which the applicant is serving. Persons in the nonapportioned Departmental Service (Bureau of Engraving and Printing, etc.) who are legal residents of States or Territories which have received 100 per cent of their share of appointments will not be examined. No person will be examined oftener than once in six months.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	9
2. Arithmetic (first grade, see sec. 35)	15
3. Letter writing (first grade, see sec. 35)	15
4. Penmanship	9
5. Copying from plain copy (first grade, see sec. 35)	6
6. Copying from rough draft (first grade, see sec. 35)	6
7. Efficiency	40
Total	100

NOTE.—Persons who fail to attain 70 per cent on the educational subjects of this examination will not be credited with the ratings for efficiency. For the Department of Agriculture the subject of efficiency will be omitted from the clerk examination, and the regular observer examination will be given for promotion in the Weather Bureau (see sec. 67).

Sec. 72. Scientific aid, Department of Agriculture.—Age limit, 20 years or over; application form, 304 and special forms. Applicants may file their applications for this position at any time. These applications, and the material submitted with them, will, however, be considered and rated at specific intervals to be determined by the Commission. The competitors will not be assembled for any of the tests, but should submit with their applications all the material required by the scope of the examination. At the request of the Department of Agriculture applications will not be accepted from other than graduates of colleges receiving the benefits of grants of land or money from the United States. Each applicant must file a properly certified statement as to the length of time spent in college, the studies pursued, the standing in those studies, the special work he desires to take up, and the special qualifications he has for such work, together with a thesis upon such special scientific subject as he may select; or in lieu of this thesis, any literature on scientific subjects published over his own signature.

The length of time any scientific aid may serve in this capacity in the Department is limited to two years. The salary will not exceed \$40 per month.

Subjects.	Weights.
1. College course, with bachelor's degree	50
2. Post-graduate course and special qualifications	25
3. Thesis or other literature	25
Total	100

Sec. 73. Secret Service.—Applicants for positions in the Secret Service of the Treasury Department should forward, addressed to the Secretary of the Treasury and marked "Personal," Form 304, properly executed, and such evidence as to their experience, training, qualifications, and personal characteristics as they may be able to obtain, without any reference to their political or religious affiliations, which may be considered as proof of their fitness for employment in this service. This examination shall be confined to experience and personal fitness. Applicants should also give the names and addresses of the persons to whom they refer as to their character and qualifications for employment in this service.

Sec. 74. Special agent, special employee, and Fur Seal Island agent, Treasury Department.—Age limit, 20 years or over; application form, 304; time allowed, five hours. These examinations will be given only when eligibles are needed; will be announced through the public press, and will probably include the following subjects: (1) Spelling (first grade, see sec. 35); (2) arithmetic (first grade, see sec. 35); (3) letter

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writing (first grade, see sec. 35); (4) penmanship; (5) copying from plain copy (first grade, see sec. 35); (6) copying from rough draft (first grade, see sec. 35); (7) practical questions pertaining to the duties of the position; (8) experience in similar work.

Sec. 75. Special pension examiner, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, eight hours. This examination will be held only when eligibles are needed. Entrance salary, from \$900 to \$1,300.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	5
2. Arithmetic (first grade, see sec. 35)	5
3. Letter writing (first grade, see sec. 35)	5
4. Penmanship	5
5. Copying from plain copy (first grade, see sec. 35)	5
6. Copying from rough draft (first grade, see sec. 35)	5
7. Law	40
8. Pension law	30
Total	100

The scope of this examination includes a thorough knowledge of general law and of pension law.

The following questions indicate the general character of the seventh and eighth subjects:

LAW.

1. (a) Show by means of examples the distinction between direct evidence and circumstantial evidence. (b) What, if any, is the distinction between civil cases and criminal cases in respect to the amount of evidence required? 2. (a) What is the legal meaning of the terms *latent ambiguity* and *latent ambiguity*? Give an example of each. What is the rule of evidence as to each? (b) Name two general classes of cases in which oral evidence can not be substituted for written evidence. 3. (a) A witness having been duly served with a writ of subpoena, what further, if anything, is necessary in civil cases before the witness can be punished for refusal to appear and testify? What further, if anything, is necessary in criminal cases? (b) How, in general, must a written instrument, which has a subscribing witness, be proved? Name two classes of exceptions. 4. (a) When a written instrument is altered by a stranger, without the knowledge of any interested party, so that its legal operation is changed, state in full the effect of such change. State in full what, if any, different effect is produced in case such an alteration is made by a party in interest. (b) When only and against whom only are depositions admissible? 5. (a) Can the defendant in a criminal prosecution be compelled to testify? What general principle governs? If he voluntarily takes the stand, how are his rights affected? (b) Give in full the object of the writ of *subpoena duces tecum*. 6. (a) Explain in full what is meant by a *common-law* marriage. (b) By what law is the validity of a marriage determined? 7. (a) What is essential to give the court jurisdiction in proceedings for divorce? How does a sentence of nullity differ from an absolute divorce? (b) State whether or not a marriage can be legally dissolved by the mutual agreement of the parties, and give the reason for your answer. 8. (a) What is the presumption as to the legitimacy of the child of a married woman? How alone may this presumption be rebutted? (b) In what two ways are guardians appointed? What are the duties of a guardian *ad litem*? 9. (a) To whom in general does the construction of contracts belong? What law governs in the construction of contracts? (b) What is the rule as to the *adequacy* of consideration in contracts? 10. (a) What is meant by *power of attorney*? (b) What at common law is necessary to constitute the offense of perjury?

PENSION LAW.

1. Define each of the following terms as used in the pension laws: (a) Invalid pension, (b) reimbursement, (c) increase (invalid), (d) "minor child." 2. (a) State all the conditions on which a volunteer soldier of the war of 1861-1865 may be entitled to a pension. (b) On what conditions may a soldier of the Regular Army disabled in 1869 be pensioned? 3. To what rate of pension is each of the following named entitled, the soldier or sailor having died from causes due to service in the war of 1861-1865: The widow of a captain in the Navy; the mother of a major in the Army; the dependent brother of a second lieutenant in the Army; the minor child of a private soldier. 4. (a) For service in what wars are "service pensions" allowed? (b) Who may receive "service pensions"? (c) State the monthly rate of pension now paid to each of the persons required to be named in (b), and if the rate has in any case been changed, give the former rate in each such case. 5. (a) What provision is made in the pension laws with reference to the proof of marriage in ordinary cases? (b) In what cases does date of marriage to soldier or widow applicants for pension affect their title thereto, and in what case will it determine the rate of pension to be paid? 6. (a) Define the term "permanent specific disability." (b) Name three permanent specific disabilities, the monthly rate for each of which is \$30. (c) What is the highest monthly rate of pension paid for disability, and for what disability is it allowed? 7. (a) What is a fee agreement and what must it contain? (b) What are the provisions of the pension laws relative to the amount of attorney fees allowed for successful prosecution of a claim for pension: (1) By "special act;" (2) for an army nurse; (3) for disability of service origin; (4) for disability not due to service? (c) Who pays these fees and from what fund? 8. (a) What facts or circumstances will operate to terminate pension in each of the following cases, the pension having been properly granted originally: (1) That of a soldier pensioned under the act of June 27, 1890; (2) that of a dependent mother; (3) that of a minor brother? (b) State all the circumstances under which an invalid pension may commence on the day after the applicant's discharge from service in the war of 1861-1865. 9. (a) State all the facts which must be shown to entitle the mother of a soldier to pen-

sion under the act of June 27, 1890. (b) Who are entitled to bounty-land warrants? (c) When must the service have been rendered and what must have been the length or character of the service to give title to bounty-land warrant? 10. (a) A soldier (private) of the war of 1861-1865 died therein, leaving a widow and two children under 16 years of age. Give the date of commencement of widow's pension; the date of commencement, duration, and rate of increase; the rate to which she is now entitled, she not having remarried, and the date on which she became entitled to such rate. (b) What steps must be taken by a pensioner whose name has been dropped from the pension rolls for failure to claim his pension to secure restoration of his name to the rolls? (c) In what cases may pensions be granted to persons who served in the Confederate army or navy in the war of 1861-1865?

Sec. 76. Station superintendent, Fish Commission, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, six and one-half hours. This examination will be given only when eligibles are needed, and will be announced through the public press.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	5
2. Arithmetic (first grade, see sec. 35)	5
3. Letter writing (first grade, see sec. 35)	5
4. Penmanship	5
5. Copying from plain copy (first grade, see sec. 35)	5
6. Copying from rough draft (first grade, see sec. 35)	5
7. Geography	10
8. Fish culture*	60
Total.....	100

* There are four classes of examinations under this subject, viz, (1) pond culture operations; (2) salmon, trout, and whitefish operations; (3) marine operations; (4) shad and pike perch operations. It is optional with the competitor to take more than one of these classes of examinations. In the event that more than one class is taken, an additional hour will be allowed for each class taken after the first. For general character of questions and tests in this subject, see fish-culturist examination, sec. 57. The questions in this examination will go somewhat deeper into the subject of fish-culture than those given in the examination of fish-culturist.

Sec. 77. Statistical field agent, Fish Commission, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, eight hours. This examination will be given only when eligibles are needed, and will be announced through the public press. Entrance salary, from \$300 to \$1,200.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	5
2. Arithmetic (first grade, see sec. 35)	5
3. Letter writing (first grade, see sec. 35)	5
4. Penmanship	5
5. Copying from plain copy (first grade, see sec. 35)	5
6. Copying from rough draft (first grade, see sec. 35)	5
7. Compilation of statistics	20
8. Commercial fisheries	40
Total	100

The following questions and tests indicate the general character of the seventh and eighth subjects:

COMPILATION OF STATISTICS.

TABULATION.

On an accompanying blank sheet make a table including the following data and showing the increase or decrease, together with the per cent of increase or decrease, in the catch of each of the two varieties of fish in each of the Great Lakes for the years 1890 and 1893. Make a full heading to your table; compute percentages to one decimal place of per cent.

The yield of trout in Lake Superior in 1890 was 2,613,378 pounds; and in 1893, 4,342,122 pounds. The yield of whitefish in 1890 was 3,213,176 pounds; and in 1893, 2,769,088 pounds. The yield of trout and whitefish in Lake Michigan in 1890 was 8,364,167 pounds and 5,455,079 pounds, respectively; and in 1893, 8,216,920 pounds and 4,833,691 pounds. In 1890 Lake Huron produced 1,505,619 pounds trout and 1,004,094 pounds whitefish; and in 1893, 3,439,575 pounds trout and 1,222,687 pounds whitefish. The catch of trout in Lake Erie in 1890 and 1893 was 121,420 pounds and 203,132 pounds, respectively, and the catch of whitefish in the same years was 2,341,451 pounds and 1,282,410 pounds. In 1890 Lake Ontario yielded 41,010 pounds trout and 148,771 pounds whitefish; and in 1893, 6,204 pounds trout and 45,380 pounds whitefish.

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Write a discussion of not less than 300 nor more than 400 words, giving an analysis of the statistics from the table prepared by you as required by the preceding sheet, and make such comments, deductions, and observations concerning the facts presented as may seem to be appropriate.

(N. B.—In marking the discussion, its errors in form, in spelling, capitals, punctuation, syntax, and style, and its adherence to the subject will be considered and marked according to the relative weights as given in the table on the preceding sheet.)

COMMERCIAL FISHERIES.

1. Give five important shad rivers and five important salmon streams of the United States, the names not to be duplicated. 2. In what cities of the United States is each of the following fisheries chiefly centered: Whale; red snapper; mackerel; cod; haddock; swordfish; sponge; oyster; fur seal; halibut? 3. To what family does each of the following fisheries belong, and what is the natural range of the species on the United States coasts: Haddock; sheepshead; shad; squeteague, or sea trout; menhaden; smelt; alewife; hake; red grouper; kingfish? 4. Prepare a statement of not less than 200 words regarding the present condition and recent phases of any one of the following fisheries: Menhaden, mackerel, sturgeon, whitefish, Pacific salmon, whale, or fur seal. 5. In what fisheries of the United States are steam vessels employed? What are the advantages of steam as applied to fishing craft?

Sec. 78. Stenographer, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, five and one-half hours, of which one and one-half hours are allowed for transcribing the stenographic notes. This examination may be taken on the dates and at the places marked A or C in the schedule, section 9. Entrance salary, from \$600 to \$1,000.

Subjects.	Weights.
1. Arithmetic (first grade, see sec. 35)	5
2. Penmanship.....	5
3. Letter writing (first grade, see sec. 35)	5
4. Copying from rough draft (first grade, see sec. 35)	10
5. Stenography	75
Total	100

The practical test in stenography will consist of two exercises, a letter and a speech, each containing 260 words. The dictations are given to all the competitors together. A preliminary test is given at the rate of 80 words per minute, in order to familiarize the competitors with the examiner's manner of dictation. This preliminary test will not be considered a part of the examination, and should not be transcribed. The regular exercises (a letter and a speech are considered as one exercise) will then be dictated at different rates of speed as follows: 80 words, 100 words, 120 words, and 140 words per minute. A rating of 70 per cent in speed will be given when the dictation is at the rate of 80 words per minute, 80 per cent for 100 words, 90 per cent for 120 words, and 100 per cent for 140 or more words per minute. The competitors will be permitted to enter the regular tests at as many different rates of speed as they may desire, but they will be required at the conclusion of the tests to select the one which they wish to transcribe and be considered in the rating. Examiners will give competitors sufficient time to make the selections. The test which they select will be the only one which they will be permitted to transcribe, and the notes of all other tests will be taken up at once by the examiner. These notes will be forwarded to the Commission, together with the other papers of the stenography examination, but will not be considered in the rating. The notes of the exercise transcribed should be attached to sheet 4 when the competitor surrenders that sheet. The notes may be transcribed either in longhand or with the typewriter.

The following dictation exercises indicate the general character of the exercises used in this examination:

DICTATION EXERCISES.

POST-OFFICE DEPARTMENT,
Washington, D. C., January 16, 1893.

HON. JOHN C. FRANKLIN, *Des Moines, Iowa.*

SIR: I have the honor to state, in answer to your inquiry of December 30, that leaves of absence are granted to railway postal clerks who receive injuries in railway accidents while on duty which incapacitate them temporarily or permanently for service. These leaves cover a period of one year, unless the injured recover and return to duty before the expiration of that period. If the disability extends beyond a year, the Department is compelled, under existing laws, to retire the clerk from the service. This regulation is a good one, but does not meet the emergency fully and fairly. It does not do full justice to those so badly injured as to be unable to resume duty at the expiration of the year limit or who may never be able to perform the labor necessary to support themselves and families. This office believes that the Department and Congress should not lose sight of the fact that the condition of the family of a clerk so badly injured as to be unable to contribute to its support permanently is, if anything, more deplorable than that of one instantly killed, because in the former case the family must

not only support itself, but must provide the necessities, such as food, clothes, medicine, and medical attendance, for the disabled head. It is respectfully recommended that provision for the special employment of clerks who have been permanently disabled in railway accidents be made.

Very respectfully,

JOHN WANAMAKER, Postmaster-General.

Mr. SPEAKER: The Clerk has just read that part of the section as it will stand if my amendment prevails, and I think it ought to prevail. I am in accord with the idea of requiring people who exercise the healing art to be competent to exercise it, but God made the people, and some people learn outside of medical or law colleges. This bill absolutely requires that before anybody shall be examined as to his fitness to practice medicine, even though he may have attended a medical college for a considerable period, he must produce a diploma from such college. Now, that is not necessary. All the diplomas on earth do not make a man competent to practice medicine or to practice law. If a man has a knowledge of the healing art within the language of this bill and can stand the examination that this section, as I propose to have it amended, will make it necessary for him to meet, he is competent to practice medicine—as competent as many that may have dwelt in a medical college. In other words, I propose to strike out this restriction and let every man stand upon his own merits—upon his knowledge of medicine and surgery all along the line—and if he fails the bill and takes the examination successfully he ought not to be deprived of the privilege of practicing medicine. In other words, let us make this a bill which seeks to test the fitness of a man to practice medicine, without necessarily burdening the applicant.

Sec. 79. Stenographer and typewriter combined, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, seven and one-half hours, of which one and one-half hours are allowed for transcribing the stenographic notes. This examination may be taken on the dates and at the places marked A or C in the schedule, sec. 9. Entrance salary, from \$600 to \$1,000.

Subjects.
1. Arithmetic (first grade, see sec. 35)
2. Penmanship
3. Letter writing (first grade, see sec. 35)
4. Tabulating (see sec. 86)
5. Copying from rough draft (first grade, see sec. 35)
6. Copying and spacing (see sec. 86)
7. Writing from dictation (see sec. 86)
8. Stenography, dictations and transcriptions (see sec. 78).....
Total

The subjects of arithmetic, letter writing, penmanship, and copying from rough draft will be required to be taken only once at the same time and place in connection with the examination for stenography and typewriting combined.

If a competitor passes in both stenography and typewriting, his name will be entered upon both registers. In addition to this, the averages in the two examinations will be combined, a weight of 1 being given to typewriting and a weight of 2 to stenography, and with the average thus obtained his name will be entered upon the combined stenography and typewriting register. If he passes in only one of the examinations, his name will be entered upon the register for the examination which he passes.

There will be but one examination for stenographer and typewriter for all branches of the service, whether at Washington or elsewhere. Whenever a vacancy occurs in any branch of the service other than departmental—for instance, in a custom-house, post-office, etc.—a list of eligibles will be prepared containing the names of those who were examined in the particular customs district, post-office district, etc., as the case may be, where the vacancy exists, and who have expressed a willingness to accept a position in that service, preference being given to legal residents of the district. Persons desiring to be examined for this position should obtain application blanks from the Commission at Washington, and should state in their applications the particular branch or branches of service in which they are willing to accept appointment. Applications for this position should be filed with the Commission at Washington and not with the local board.

FOR THE POSITIONS OF MALE STENOGRAPHERS AND TYPEWRITERS THE NUMBER OF ELIGIBLES HAS NOT BEEN SUFFICIENT TO MEET THE NEEDS OF THE SERVICE.

There is also a need for male stenographers and typewriters, who have a knowledge of Spanish, for service in the Philippine Islands.

Sec. 80. Superintendent of construction, Supervising Architect's Office, Departmental Service.—The duties of this position necessitate the appointee's continuous residence in the city where the building under his superintendence is being constructed. Age limit, 20 years or over; application forms, 304 and 375; time allowed, two days of seven hours each. As to applying for this examination, see p. 4. Subjects 1 and 2 are given on the first day and subjects 3 and 4 are given on the second day. A com-

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petitor must have had at least five years' practical experience in building construction, either as superintendent proper, contractor, architect, or engineer, and must furnish prima facie evidence in support thereof to the Commission before he can be admitted to the examination.

Subjects.	Weights.
1. Materials and construction	40
2. Arithmetic and mathematics	10
3. Building supervision	15
4. Specifications	10
5. Technical education and experience *	25
Total	100

* To be rated on Form 375.

The following questions and tests indicate the general character of the examination:

MATERIALS AND CONSTRUCTION.

1. What are the requisites of first-class building brick, of best quality lime, and of best quality building sand? 2. What are the characteristics of good cement; what tests are necessary to determine its quality, and in what respects do Rosendale and Portland differ? 3. (a) What is "dry rot" and how is it prevented in buildings? (b) What are the requirements of first-class yellow-pine lumber? (c) In what respects do cast iron, malleable iron, and steel differ? 4. (a) What is quarry water, what is its effect on stone, and how is it gotten rid of? (b) Compute the number of cubic feet of well-rammed concrete to be obtained from the following materials: Three barrels (packed) Portland cement, 11 barrels sand, 9 barrels gravel, and 15 barrels ordinary broken stone. (Show work in full.) 5. In foundations, what various means are adopted to increase the bearing capacity of a yielding soil? 6. (a) What precautions must be taken to insure good joints and bond in (1) brick masonry, (2) ashlar facing with brick backing? (b) Give a pen-and-ink sketch section and plan of a fireplace, with hearth and trimmer arch, opening 2' 6" high, 3' 0" wide, and 16" deep. 7. What is "slow-burning construction"? Give a neat pen-and-ink sketch of the post-and-girder connections and of the floor construction of a building of this type. 8. Give pen-and-ink sketch sections through head, sill, and jamb of a sliding-sash window frame; name the different parts, and specify the material for each part. 9. Give neat pen-and-ink sketch sections through a door jamb, and through the stile of a veneered door; name the different parts in each case, the materials for each part, and describe or show plainly by sketches the method of construction. 10. Make a neat pen-and-ink sketch showing longitudinal section through string of an iron staircase with marble treads; also show a section of gallery casing in a fireproof building, the floor to be of marble.

ARITHMETIC AND MATHEMATICS.

1. Extract the square root of 492,868.586116. 2. A contractor agrees to complete a piece of work in 30 days, and puts 17 men to work on it, the working day being 8 hours. At the end of the 13th working day 5 men quit work, and he finds that only $\frac{1}{4}$ of the work has been done. How many extra men, provided the total force works hereafter 9 hours per day, will it be necessary for him to hire at once so that he may fulfill his contract? 3. Divide $\frac{5}{8}$ by $\frac{3}{4}$, multiply the quotient by 3.5468, and from the product subtract $\frac{1}{8}$ of 13.76. 4. The depth of a building lot is one foot less than double its frontage. If a strip 1 yard wide be taken off all around, the area is diminished 210 square feet. What is the area of the original lot in square feet? 5. The plan given shows excavation for house. General excavation is 8' 9" deep and deep-area windows 4' 8" deep. The ground is level. Find total excavation in cubic yards. 6. The area of a circle is 272 square feet. Find its radius and circumference in feet and inches. 7. The axes of an ellipse are 4 and 6 inches, respectively. Show one method of constructing it graphically. 8. A beam of uniform cross section 25 feet long and weighing 50 pounds per foot is placed on a rail. It has a load of 150 pounds at 2 feet from one end and 400 pounds at 5 feet from the other. If there is equilibrium, find position of supporting rail from each end of beam in feet and decimals of a foot. 9. Given two circles of different radii, and one of which lies either wholly or in part outside of the other, show, geometrically, how to draw a straight line tangent to both circles. 10. From the given sketch calculate the strains on the jib and the chain of this crane. State whether tension or compression.

BUILDING SUPERVISION.

1. (a) State what mental and moral qualities a successful superintendent must possess. (b) State what technical qualifications he should possess. 2. (a) How would you check the stakes defining the lot on which the building is to be erected, under your superintendence, and how would you fix them for future reference? (b) What points would you attend to in the excavation for foundation? 3. (a) The foundation having been excavated to the depth specified, how would you test its bearing capacity? (b) If its capacity did not come up to requirements of specification, what would you do? 4. If the nature of the soil is such that wooden piles must be used and have been specified, state fully what you would do, as a superintendent, from the time of arrival of the piles on the ground until they are driven in conformity to contract requirements. 5. State what precautions you would take in order to obtain the best quality of work and best results in foundation footings (a) of concrete, (b) of brick, and (c) of stone. 6. In the superintendence of cut work, either in granite, sandstone, or limestone, what precautions would you take in order to obtain the specified standard (a) in material, (b) in the cutting and molding, and (c) in the setting of the stone? 7. If, in your opinion, the contractor is using material not up to specification, or the quality of the work done, through inefficiency of workmen or other cause, is not first class; and, generally, when the work in any respect is not being conducted or performed according to your interpretation of specification and contract, state, in detail, what course or courses you would pursue. 8. State what general considerations should govern a superintendent's course of action in all matters relating to his work.

SPECIFICATIONS.

(a) Give the general heads for a specification for a small brick office building with fireproof floors and roof. (b) Give rough draft of specification for the brickwork, woodwork, and ironwork for the same.

Sec. 81. Tagger, Bureau of Animal Industry, Department of Agriculture.—Age limit, 20 years or over, but the Department of Agriculture requests eligibles between the ages of 20 and 40 years; minimum height 5 feet 7 inches; application form, 304; time allowed, four hours. Entrance salary, \$720. As to applying for this examination, see p. 4. Taggers are usually assistants to meat inspectors and stock examiners in the Bureau of Animal Industry.

Subjects.	Weights.
1. Spelling (second grade, see sec. 36).....	20
2. Arithmetic (second grade, see sec. 36).....	20
3. Letter writing (second grade, see sec. 36).....	20
4. Penmanship	20
5. Copying from plain copy (second grade, see sec. 36).....	20
Total	100

Sec. 82. Telegrapher, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 1140; time allowed, five hours. This examination will be given only when eligibles are needed, and will be announced through the public press.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	5
2. Arithmetic (first grade, see sec. 35).....	5
3. Letter writing (first grade, see sec. 35).....	5
4. Penmanship	5
5. Copying from plain copy (first grade, see sec. 35).....	5
6. Copying from rough draft (first grade, see sec. 35).....	5
7. Practical questions	20
8. Practical experience *	50
Total	100

* Rated on Form 1140.

NOTE.—Form 1140 provides for a statement of the competitor's practical experience as a telegrapher, which must be corroborated by a certificate of the proper officer of the telegraph company or companies by which he has been employed.

Sec. 83. Topographic draftsman, copyist topographic draftsman, and assistant topographer examinations, Departmental Service.—Age limit, 20 years or over; application forms, 304 and 375; only one application will be required for the three examinations; time allowed, two days of six consecutive hours each for the topographic draftsman and copyist topographic draftsman examinations, and two days of seven consecutive hours each are allowed for the assistant topographer examination when taken separately. If all are taken together, the assistant topographer must be first completed, and an additional day of six hours will be allowed for the fifth subject of the topographic draftsman examination, which is the same as the third subject of the copyist topographic draftsman examination.

These examinations may be taken on the date and at the places marked D in the schedule, sec. 9. Applicants may take one or all of these examinations and should specify in their applications the examinations desired. Subjects 1, 2, and 3 are identical in the assistant topographer and topographic draftsman examinations, and subjects 1 and 4 of the topographic draftsman examination are identical with subjects 1 and 3 of the copyist topographic draftsman examination. These common subjects are given but once, even though more than one of the examinations is taken. In the topographic draftsman and copyist topographic draftsman examinations the competitor may file as additional evidence of his drafting ability a drawing or tracing 8½ inches by 14 inches that has been made by himself within one year of the date of the examination. The drawing must bear the competitor's examination number and be handed in on the day of examination, or be received by the Commission at Washington within thirty days thereafter. All vacancies for draftsman requiring no other special qualifications that occur in the Coast Survey will be filled from the topographic draftsman register, while such vacancies in the General Post-Office, Geological Survey, and General Land Office may be filled from either this register or the copyist topographic draftsman register.

Writing or drawing paper will be furnished, but the competitor will be required to provide himself with inks, pens, scales, squares, and small drawing board (15 inches square will suffice).

(a) *Topographic draftsman*.—Time allowed, two days of six consecutive hours each. The first three subjects must be completed on the first day, and the fourth subject may be commenced and continued the second day.

Subjects.	Weights.
1. Letter writing (first grade, see sec. 35)	10
2. Geographic projections	20
3. Mathematics (including arithmetic, algebra to quadratics, plane geometry, and elements of trigonometry)	20
4. Topographic drawing and lettering*	50
Total	100

*The competitor must obtain an average of not less than 70 in this subject in order to become eligible.

(b) *Copyist topographic draftsman*.—Time allowed, two days of six hours each. The first two subjects must be completed on the first day, and the third subject may be commenced and continued the second day.

Subjects.	Weights.
1. Letter writing (first grade, see sec. 35)	10
2. Penmanship	10
3. Topographic drawing and lettering*	80
Total	100

*The competitor must obtain an average of not less than 70 in this subject in order to become eligible.

(c) *Assistant topographer*.—Time allowed, two days of seven hours each. The first four subjects must be completed on the first day, and the fifth subject may be commenced and continued on the second day.

Subjects.	Weights.
1. Letter writing (first grade, see sec. 35)	5
2. Geographic projections	10
3. Mathematics	10
4. Geography of the United States	10
5. Topographic drawing and lettering	15
6. Elements of astronomy and geodesy and use of instruments	15
7. Contour construction	15
8. Training and experience *	20
Total	100

* Rated on Form 375.

The following questions and tests indicate the general character of the subjects of geographic projections, geography, and mathematics.

GEOGRAPHIC PROJECTIONS.

State fully and clearly the principles of polyconic projection, and describe in detail the process of constructing, by this projection, a map of that part of the United States and Canada lying between 30° and 50° north latitude and 70° and 90° west longitude. The scale of the map is to be $\frac{1}{1,200,000}$.

GEOGRAPHY.

1. Name five States bordering on the Great Lakes and name an important river in each of the States required. 2. Name five States which border on the Missouri River, and name the capital of each State required. 3. In what State is each of the following-named located: Fremont Peak, Tulare Lake, Mount Mitchell, Schoodic Lakes, Mount Baker? 4. Name the most populous city in each of the following-mentioned States and the river or body of water on which each is situated: Connecticut, West Virginia, North Dakota, Washington, Arkansas. 5. Name two States which border on each of the following-mentioned rivers or bodies of water: Potomac River, Lake Champlain, Savannah River, Columbia River, Sabine River.

MATHEMATICS.

1. Same as question 1 of the arithmetic of first grade, see sec. 35. 2. Divide $5\frac{1}{2}$ by $\frac{1}{2}$, multiply the quotient by 3.5468, and from the product subtract $\frac{1}{16}$ of 13.76. 3. Three draftsmen, A, B, and C, are

engaged upon a piece of work. A can do it alone in 7, B in 15, and C in 21 days. After the three men work together $\frac{1}{12}$ days B stops work. How long will it take A and C, working together, to complete the work? 4. Extract the square root of 94,254.526081. 5. What size sheet of paper, in inches, would be required for a map covering one degree of latitude and longitude, on a scale of $\frac{1}{80,000}$, to allow a margin $1\frac{1}{4}$ inches wide all round, outside the neat lines, if one minute of latitude is equal to 1,850 meters and one of longitude on the largest arc is equal to 1,356 meters? 6. Show how to draw a circle through three given points not on a straight line, and prove your construction. 7. Find the point on a given straight line, such that the sum of the distances from it to two given points not on this line may be the least possible.

8. Given $\frac{x-5}{4} = \frac{2x-y-1}{3} = \frac{2y-2}{5}$, and $\frac{2y+x-1}{9} = \frac{x+y}{4}$, find x and y.

9. Given $x^2y + xy^2 = 20$, and $\frac{1}{x} + \frac{1}{y} = \frac{5}{4}$, find x and y.

10. In a triangle A, B, C, the angles A and B and the side a are given. Write down the formulae for finding C, b, and c, and express the logarithms of these in terms of those of A, B, and a.

No specimen questions in the fifth, sixth, and seventh subjects can be furnished.

(d) *Topographic draftsman, Land Office Service.*—Age limit, 20 years or over; application forms, 304 and 375; time allowed, two days of six hours each. This examination may be taken on the date and at the places marked D in the schedule, section 9. The first four subjects will be given on the first day and the remaining subjects on the second day. Writing or drawing paper will be furnished, but the competitor will be required to provide himself with ink, pens, scales, squares, and small drawing board (15 inches square will be sufficient).

Subjects.	Weights.
1. Letter writing (first grade, see sec. 35)	10
2. Penmanship	10
3. Mathematics (sheet 3, topographic draftsman).....	10
4. Public land surveying (sheet 7, surveyor-general's clerk).....	20
5. Topographic drawing and lettering (sheet 4, topographic draftsman) *	40
6. Training and experience *	10
Total	100

* Rated on Form 375.

TRADES AND OTHER NONEDUCATIONAL EXAMINATIONS, DEPARTMENTAL AND INDIAN SERVICES.

Sec. 84. Age limit, 20 years or over. In these examinations no educational tests are given, but applicants are graded on the elements of age, character as a workman, experience, and physical qualifications. The information on which the marks are based must be furnished by the applicant on blanks which will be sent to him for that purpose. Applicants are required to file their applications on Form 1093. Applicants who desire more than one fourth-grade examination must file an additional Form 1093 for each examination desired. Care should be taken to furnish accurate and complete information, in order that a sufficient basis may be had for grading the papers. Applications may be filed at any time.

Applicants for these examinations, if for the departmental service, may sign their applications by mark, if unable to write. The list of positions for which these examinations are given is as follows:

Assistant wagon maker.	Herder.	Saddler.
Baker.	Hostler.	Sailmaker.
Blacksmith.	Knife grinder.	Sawyer.
Blacksmith apprentice.	Laundress.	Shoemaker.
Butcher.	Leather worker.	Stableman.
Cabinetmaker.	Levelman.	Steam fitter.
Carpenter.	Locksmith.	Stockman.
Chainman.	Logger.	Stonecutter.
Coachman.	Logging foreman.	Tailor.
Cook.	Machinist	Teamster.
Dairyman.	Mason.	Tinner.
Decorator.	Miller.	Toll keeper.
Dynamo tender.	Nurseryman.	Transferer.
Engineer, departmental.	Ox driver.	Wagon maker.
Ferryman.	Painter.	Warehouse porter.
Fireman, departmental.	Plasterer.	Wheelwright.
Foreman of building.	Plate cleaner.	Wireman.
Gardener.	Plumber.	And other positions of similar character.
General mechanic.	Police officer.	
Hardener.	Rodman.	
Harness maker.	Roller maker.	

The following is a statement of the methods by which the fourth-grade (or trades) examinations will be rated:

(a) *Age*.—An applicant who is over 25 and not exceeding 45 years of age shall be given a maximum credit of 100 for age. All applicants less than 25 or more than 45 years of age will receive a mark proportionately less than 100 per cent.

(b) *Character as a workman*.—An applicant will be required to furnish evidence as to the *quality* of work he is capable of performing, his *ability* as a *rapid* or *slow* workman, and his record as to *habits* of industry in connection with his trade or occupation. In the consideration of these points an applicant will be rated according to the following plan: Quality—poor, 70 or less; average, 70 to 85; exceptional, 85 to 100. Quantity—poor, 70 or less; average, 70 to 85; exceptional, 85 to 100. Industry—poor, 70 or less; average, 70 to 85; exceptional, 85 to 100.

(c) *Experience*.—An applicant who has served the regular period of apprenticeship required by his trade and has thus acquired the status of journeyman, shall be given a mark of 70 for experience. For each full year's general experience as journeyman, to and including two years, he shall be given a mark of 10 in addition to 70, and for each full year's experience over two and not exceeding seven years, he shall be given a mark of 2 in addition to 90. For seven or more years' experience as a journeyman a maximum mark of 100 shall be given. Provided that in determining these marks due consideration will be given to the range or quality of the experience, in addition to its mere length.

(d) *Physical qualifications*.—An applicant whose application and vouchers show him to have no physical defects or disqualifications for the practice of the trade for which he desires to be examined shall receive a mark of 100 for physical qualifications. An applicant whose application or vouchers show any physical defects which may impair his efficiency in the practice of the trade for which he wishes to be examined will have a proportionate deduction made from 100, according to the nature of the defect or disqualification, and the remaining mark will be his mark for physical qualifications.

(e) In cases where the elements of age, character as a workman, experience, and physical qualifications are considered, the relative weights will be as follows: Age, 1; character as a workman, 4; experience, 4, and physical qualifications, 1.

(f) Where it is desirable, a general intelligence test, or practical questions, will be given in addition to the examination on Form 1093.

Sec. 85. Translator, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed for basis or grade subjects, five hours on the first day and two hours for each language on the second day. Only the basis or grade subjects may be taken on the first day. This examination may be taken only at the semi-annual examination in the spring, on the date and at the places marked D in the schedule, sec. 9. Applicants must specify in their applications which modern language or languages they desire to take. The languages which may be selected are Danish, French, German, Italian, Spanish, and Swedish. The general character of the examination is identical for all the languages. The examinations are divided into two parts. The first part consists of two extracts taken from contemporaneous foreign works or magazine articles. Each of these extracts consists of from 150 to 200 words, and the competitor is required to translate them into English without the use of a dictionary. The second part is like the first in character and scope, but is shorter. The extracts, however, are selected from works or magazine articles by English or American authors, and are to be translated into the foreign language without the use of a dictionary. The translation from the foreign language into English constitutes two-thirds of the test in translation, and is weighted accordingly. In the translations the competitor must adhere as closely to the text as the idiomatic usage of the different languages will permit.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	5
2. Arithmetic (first grade, see sec. 35)	5
3. Letter writing (first grade, see sec. 35)	5
4. Penmanship	5
5. Copying from plain copy (first grade, see sec. 35)	5
6. Copying from rough draft (first grade, see sec. 35)	5
7. Modern language	70
Total	100

The following tests in French and German indicate the general character of all the modern language examinations:

Make a close translation of the following into idiomatic English:

(a) J'avais joué, à diverses reprises, de sa conversation brillante, de son esprit éloquent et informé sur toute chose; mais combien plus je le goûtai ce soir-là! Il refit avec moi mon voyage, il s'anima, il

laisser transparaître ce fond de nature poétique et passionnée, don gratuit de la race, qui voilait d'abord chez lui la convention mondaine. "Votre chagrin me plaît," dit-il, "car il y entre de l'amour. N'en doutez pas. Vous aimez l'Espagne; vous reviendrez à elle. Alors vous étudierez ce que vous avez justement aperçu."

(b) Un domestique à cheveux gris, vêtu de noir, que j'ai trouvé dans le vestibule, a pris mon nom. J'ai été introduit, quelques minutes plus tard, dans un vaste salon tendu de soie jaune, où j'ai reconnu d'abord la jeune personne que je venais de voir à la fenêtre, et qui était définitivement d'une extrême beauté. Près de la cheminée, où flamboyait une véritable fournaise, une dame d'un âge moyen, et dont les traits accusaient fortement le type créole, se tenait ensevelie dans un grand fauteuil compliqué d'édredons, de coussins et de coussinets de toutes proportions. Un trépied de forme antique, que surmontait un *brasero* allumé était placé à sa portée, et elle en approchait par intervalles ses mains grêles et pâles.

Make a close translation of the following into idiomatic French:

(a) The place of our retreat was in a little neighborhood consisting of farmers, who tilled their own grounds, and were equal strangers to opulence and poverty. As they had almost all the conveniences of life within themselves, they seldom visited towns or cities in search of superfluities. Remote from the polite, they still retained the primeval simplicity of manners; and frugal by habit, they scarcely knew that temperance was a virtue. They wrought with cheerfulness on days of labor, but observed festivals as intervals of idleness and pleasure.

(b) On the day of which I speak, Jim was very talkative, and unfolded to me his whole history. It seems that he was the son of a French carpenter, brought up and married on the other side, who had immigrated to this country to be employed, for the rest of his life, in Philadelphia.

Make a close translation of the following into idiomatic English:

(a) Diesen Grund hätte Anna freilich niemals errathen. Allein sie war feinfühlend genug, um sich über die zwiefache Lücke in des Bräutigams Briefen recht gründlich zu ängstigen, andererseits aber auch wieder zu feinfühlend, um sich durch Fragen und Vorwürfe Licht zu verschaffen. Acht weibliche Naturen sind jedoch in der Regel entschlossenen Geistes, und je weniger man hinter ihrem stillen Walten Willenskraft und Eigensinn vermutet, um so mehr besitzen sie. So war es auch bei dem sanften, beschiedenen Fräulein.

(b) Die bedeutendste Erwirkung von aussen hat Afrika durch die Araber erfahren. Schon in vor-schriftlicher Zeit setzten sich arabische Stämme im Oberniltthal und in Osthorn des schwarzen Erdtheils fest, nach und nach Seeleute von Jemen bis zur Sofala und Madagaskar vor, und in einem späteren Zeitafter, nach dem Aufstodern des Islams, schlugen die Wogen der arabischen Bewegung bis an die Küsten des atlantischen Meeres.

Make a close translation of the following into idiomatic German:

(a) The moment he succeeded to the paternal farm he assumed a new character, took a wife, attended resolutely to his affairs, and became an industrious, thrifty farmer. With the family property he inherited a set of old family maxims, to which he steadily adhered. He saw to everything himself; put his own hand to the plow; worked hard; ate heartily; slept soundly; paid for everything in cash down, and never danced unless he could do it to the music of his own money in both pockets.

(b) The life, the travels, and the actions of Peter the Great exhibit a surprising contrast to the manners which prevail among us, and which are, perhaps, rather too delicate; and this may be one reason why the history of this famous man so much excites our curiosity.

Sec. 86. Typewriter, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, six hours. This examination may be taken on the dates and at the places marked A or C in the schedule, sec. 9. Entrance salary, from \$600 to \$1,000.

Subjects.	Weights.
1. Arithmetic (first grade, see sec. 35)	5
2. Penmanship	10
3. Letter writing (first grade, see sec. 35)	10
4. Copying from rough draft (first grade, see sec. 35)	15
5. Tabulating	10
6. Copying and spacing	20
7. Writing from dictation	30
Total	100

The technical subjects of the typewriting examination consist in copying from rough draft, tabulating, copying and spacing, and writing from dictation, on which accuracy and speed are considered in the ratings, accuracy being given a weight of 3 and speed a weight of 2.

The following specimens indicate the general character of the exercises used in this examination:

TABULATING.

[Preliminary machine tests will not be permitted, but a rough draft of the table may be made with pencil or pen on scratch paper and copied with typewriter on the accompanying blank sheet. The time consumed in making such rough draft will be included in the time allowed for this exercise.]

Write the following facts with the typewriter, in tabular form, in six columns, with proper headings (general heading and column headings), without abbreviations. (The figures given below are not considered as abbreviations.) The general heading should be brief and should indicate clearly the facts which are shown in the table, and each column heading should indicate the facts which are given in that column. The table should not exceed 66 spaces in width.

The records of the district of Alabama show that in 1893 (all of the statistics given below being for that year) there were in the warehouses 9,937 gallons of spirits in August, 14,997 gallons in September, 12,312 gallons in October, 17,863 gallons in November, and 23,072 gallons in December. In August there were 245,417 gallons of spirits warehoused in the district of Maryland; in the months of Novem-

CLASSIFIED CIVIL SERVICE.

ber and September there were warehoused, respectively, 86,845 and 252,272 gallons, and 39,291 and 189,032 gallons, respectively, in the months of December and October. No spirits were stored in the district of North Carolina in the months of December and November, and only 47 and 94 gallons, respectively, in October and September. There were in the warehouses in this district 274 gallons in the month of August; 4,813,206 are the figures given for the number of gallons for September, 623,401 those for November, and 3,917,212 those for August, as being the number of gallons of spirits in the warehouses of the district of Kentucky, while the figures for October and December are given, respectively, as 2,465,563 and 160,405 gallons. In the month of December only 39,291 gallons were in the warehouses in the district of Massachusetts, and only 86,845 gallons during the month of November, while in the month of August there were 245,417 gallons. The number of gallons of spirits warehoused in this district was 189,032 gallons in October and 252,272 gallons in September. In August there were 12,210 gallons of spirits in the warehouses in the district of Missouri; in the months of November and September there were in the warehouses, respectively, 515 and 18,759 gallons, and 18,064 and 1,144 gallons, respectively, in the months of October and December; 552,993 gallons were in the warehouses in the month of October and 517,053 in August in the district of Pennsylvania; the number of gallons warehoused in November, December, and September were, respectively, 375,114, 148,263, and 566,466. In the district of Virginia there were 49,554 gallons of spirits in the warehouses in August, 23,661 gallons in October, 44,386 gallons in September, and 2,139 and 4,452 gallons, respectively, in November and December.

COPYING AND SPACING.

The competitor is required to copy an exercise similar to the one shown in reduced size on page 53, reproducing it in every particular, including punctuation and other marks, and preserving all spaces between lines and between words, figures, and characters, and the relative positions of the lines on the sheet.

The copy furnished to the competitor is a photolithograph of a sheet which has been typewritten and so prepared that it may be reproduced on any style of typewriting machine.

WRITING FROM DICTATION.

One of the examiners will dictate to each competitor separately, in groups of five or six words, a passage of about 175 words, which the competitor will be required to write with the typewriter. As speed is an important element in this exercise, the examiner will read as rapidly as the competitor may desire and indicate. The examiner will give the paragraphs and all the punctuations. The sheet will be surrendered immediately after the competitor has finished writing the exercise, no time being allowed for corrections.

The new navy has made itself most powerfully felt for good in national affairs. It was to the existence of this navy that we owed the escape from war with Chile seven years ago. It is the existence of the navy now which more than anything else prevents the chance of any foreign war. The scholar who judges of the actual strife of living only from his standpoint in the cloister, and the man of wealth who seems to think of nothing but wealth, and to regard the unsettling of the stock market as outweighing the upholding of national honor, show themselves thoroughly undesirable citizens, in spite of the fact that they may be excellent men in their family relations, and may perform their ordinary civic duties honorably. So it is with the good people who can not understand that a great country must, whether it will or not, have a foreign policy, and that after all there is some nobler ideal for a great nation than that of being an assemblage of prosperous hucksters.

Sec. 87. Watchman, Departmental Service.—Age limit, 20 years or over; application form, 304; time allowed, three hours. Entrance salary, \$480 to \$720 per annum. As to applying for this examination, see page 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37).....	20
2. Arithmetic (third grade, see sec. 37).....	20
3. Letter writing (third grade, see sec. 37).....	20
4. Penmanship	20
5. Copying from plain copy (third grade, see sec. 37).....	20
Total	100

DEPARTMENTAL SERVICE—TYPEWRITING EXAMINATION.

SIXTH SUBJECT.—*Copying and spacing.*

Make on the accompanying sheet an exact copy of the following exercise, reproducing it accurately in every particular, including punctuation and other marks, and preserving all spaces between lines and between words, figures, and characters, and the relative position of lines on the sheet:

MINT AT PHILADELPHIA.

The value of gold and silver deposited at the mint at Philadelphia during the fiscal year ended June 30, 1893, aggregated \$68,137,377.08 against \$63,522,406.30 deposited the previous year, showing an increase of \$4,614,970.78.

United States gold coins of the face value of \$499,765, containing 24,052.537 standard ounces, of the coining value of \$447,-489.06, and silver coins of the face value of \$5,239,608.20, were deposited and melted during the year.

Foreign gold coins of various denominations containing 64,455 standard ounces, of the coining value of \$1,217.77, and silver coins containing 200.55 standard ounces, of the value of \$233.37, were deposited during the year.

The quantity and value of both metals deposited are as follows:

:	Metals.	:	Standard ounces.	:	Value.	:
:	Gold.....	:	334,507.718	:	\$6,225,399.40	:
:	Silver.....	:	53,207.324.57	:	61,913,977.68	:
:	Total.....	:	53,541,832.288	:	68,137,377.08	:

In addition, 425,500 pounds of minor coin blanks were received.

The number of assays made during the year was, of gold 22,000 and of silver 35,000.

The quantity of precious metals operated upon in the metallurgical department was 725,771,663 ounces of standard gold and 10,-972,625.24 ounces of standard silver.

The melter and refiner made during the year 86 gold ingot melts and 3,451 silver ingot melts. Of the former 3, and of the latter 28, were condemned. He also made 80 gold and 478 silver melts for bars.

The operations of the refinery were as follows:

REFINING OPERATIONS. 1893.

:	Bullion.	:	Gold.	:	Silver.	:
:		:	Standard ozs.	:	Standard ozs.	:
:	Gross weight.....	:	607,375.332	:	528,852.700	:
:	Refined by acid, standard.....	:	317,511.921	:	890,522.670	:
:	ounces by assay.	:		:		:
:	Returned from refinery.....	:	317,395.742	:	890,564.830	:

CUSTODIAN SERVICE.

Sec. 88. In cities in which there are Federal buildings, except Washington, D. C., the positions of assistant custodian, engineer (steam) of the first class, assistant custodian-janitor, elevator conductor, engineer (steam) of the second class and of the third class, fireman, janitor, and watchman for such public buildings pertain to the custodian service. Registers are made up for each city; and applicants in a city, or in the vicinity of a city, who pass the examination have their names entered upon a register of eligibles, and are certified for appointment to positions in the Federal building of that city when vacancies exist. It is the practice of the Treasury Department not to appoint to these positions persons who do not reside in the city or vicinity in which the vacancies exist.

Assistant custodian.—Age limit, 20 years or over, but the Treasury Department desires eligibles who are between the ages of 21 and 50 years; application form, 1093; time allowed, five hours. This examination will be held only when eligibles are needed.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	12.5
2. Arithmetic (first grade, see sec. 35).....	12.5
3. Letter writing (first grade, see sec. 35).....	12.5
4. Penmanship.....	12.5
5. Copying from plain copy (first grade, see sec. 35).....	12.5
6. Copying from rough draft (first grade, see sec. 35).....	12.5
7. Experience*	25
Total	100

* Rated on Form 1093. Experience in architectural work, or as a civil or mechanical engineer, or in the mechanical trades of carpenter, cabinetmaker, plumber, or steam fitter, will be considered, as well as experience in the performance of similar duties.

Sec. 89. Engineer (steam), first-class.—Age limit, 20 years or over, but the Treasury Department desires eligibles who are between the ages of 21 and 50 years; application form, 1093; time allowed, seven hours. This examination will be held only when eligibles are needed. Appointments from the register established as a result of this examination are made only to positions of great responsibility, requiring long experience and a thorough knowledge of machinery—such positions as those requiring first-class steam engineer's license.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	5
2. Arithmetic (first grade, see sec. 35).....	5
3. Letter writing (first grade, see sec. 35).....	5
4. Penmanship.....	5
5. Copying from plain copy (first grade, see sec. 35).....	5
6. Copying from rough draft (first grade, see sec. 35).....	5
7. Practical questions	50
8. Character as a workman (see sec. 84)*	10
9. Experience (see sec. 84)*	10
Total	100

* Rated on Form 1093.

The following questions and tests will indicate the general character of the seventh subject:

PRELIMINARY QUESTIONS.

1. What is your trade or occupation? 2. How long have you been engaged in such trade or occupation? 3. What qualifications or fitness do you possess, and what experience have you had, which fit you for the position for which you are being examined? (Specify in detail each type of engine and boiler with which you have had experience and state the exact period of such experience.) 4. Have you an engineer's certificate? If so, when and where was it issued?

PRACTICAL QUESTIONS.

1. What are the three principal types of freight and passenger elevators now in use in large buildings? 2. Describe the principles and peculiarities of any make of the two following types of elevators:

(a) Hydraulic, (b) electric. 3. Describe the construction of (a) the arc lamp, and (b) the incandescent lamp. 4. Which class of lights is the most efficient as regards economy, the arc or the incandescent light? 5. What is the meaning of the term "constant potential," as applied to the electric current? 6. What kinds of light are mostly used on constant potential currents? 7. Make a sketch showing lamps arranged in series and lamps arranged in multiple arc. 8. What is the Edison three-wire system, and what are its advantages? 9. Sketch and describe (a) a series-wound dynamo; (b) shunt-wound dynamo; (c) compound-wound dynamo. 10. What are the advantages of multiple expansion steam engines? 11. Make a sketch of a slide steam valve and a piston steam valve, and give the advantages of each for high steam pressures. 12. What are the causes and effects of wire drawing? 13. Sketch a good indicator diagram from a condensing engine cutting off at two-thirds stroke, and indicate on the sketch the technical name of each line. 14. Sketch and describe the following three types of boilers: (a) Fire tube or tubulous; (b) marine return water tube; (c) outside furnace, built in. 15. Describe the advantages and disadvantages of fire-tube boilers, and state which type, in your opinion, is best adapted for a large building for all purposes. 16. Describe the hot-water heating system as fitted in large buildings. 17. Describe what you consider the most efficient system of heating a large public building. 18. Describe the best method of installing a steam-heating plant in a large building, taking steam from a set of fire-tube boilers. Diagrams may be used to illustrate answers.

Sec. 90. Assistant custodian-janitor; engineer, second-class; fireman; watchman; wireman; dynamo tender; elevator conductor; engineer, third-class; janitor, and other similar positions.—Age limit, 20 years or over, but the Treasury Department desires eligibles who are between the ages of 21 and 50 years; application form, 1093. Applications for these examinations may be filed at any time with the Civil Service Commission at Washington, D. C. Requests for information or blank applications should be addressed either to the secretary of the local board of examiners or to the Civil Service Commission at Washington, D. C. If an applicant desires to apply for more than one kind of position in this service, a separate application must be filed for each. Applicants should ascertain from the secretaries for the local custodian service boards the titles of the various positions for which applications will be accepted.

Persons are considered physically disqualified for any of these examinations who have suffered the loss of an arm or a leg or who are ruptured or have other serious disability.

Subjects.	Weights.
1. Physical ability, as determined by age and physiol' condition.....	20
2. Ability and character as a workman	40
3. Experience in the performance of similar duties	40
Total	100

No educational tests of any kind are required in these examinations, but the subjects will be rated upon the statements and vouchers furnished on Form 1093. For method of rating these subjects, see fourth grade examinations, sec. 84.

Applicants for the position of janitor in the custodian service in a building occupied as a sub-treasury will be examined in accordance with the plan for Schedule D in the Sub-Treasury Service. (See sec. 164.)

CUSTOM-HOUSE SERVICE.

Sec. 91. Examinations for the custom-house branch of the service are held annually at the headquarters of the various customs districts throughout the country. Request for application blanks, dates of the examinations, a list of the places where the examinations will be held, and other information, should be addressed to the secretary of the local board of examiners at the custom-house where employment is desired. Dates of examinations will be as follows:

Custom-house service for the New York custom-house, first grade, second Monday in February; second grade, second Monday in May; third grade, second Monday in October. For all other custom-houses, all grades, second Monday in July.

Positions requiring a knowledge of stenography and typewriting will be filled from the departmental registers. (See sec. 79.)

Eligibles will be certified for appointment only in the district in which they are examined. Attention is invited to the fact that in the Custom-House Service from those certified the Department usually selects for appointment an eligible who is a resident of the district in which the vacancy exists.

Sec. 92. First-grade examination, custom-house.—Age limit, 20 years or over, but the Treasury Department desires eligibles between the following-named ages: Deputy

CLASSIFIED CIVIL SERVICE.

collector (outside), 21 and 55 years; deputy collector (inside), 21 and 60 years; day inspector, 21 and 55 years; application form, 101; time allowed, five and one-half hours. This examination will be given for the positions of deputy officer, clerk (male and female), and day inspector.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	10
2. Arithmetic (first grade, see sec. 35).....	25
3. Letter writing (first grade, see sec. 35).....	15
4. Penmanship.....	15
5. Copying from plain copy (first grade, see sec. 35).....	10
6. Copying from rough draft (first grade, see sec. 35).....	10
7. United States and foreign geography.....	15
Total.....	100

The following questions indicate the scope and character of the seventh subject:

UNITED STATES AND FOREIGN GEOGRAPHY.

1. Name States as follows: Two that border on the Columbia River; two that border on both the Missouri and Mississippi rivers; two that border on both Virginia and the Ohio River; two that border on New Jersey; two that border on the Savannah River. 2. In what State is each of the following named: Penobscot Bay, Corpus Christie Bay, Puget Sound, Pearl River, Oneida Lake. 3. Name the largest city in each of the following-named States, and name the river or body of water on which each city required is situated: Connecticut, Mississippi, Nebraska, Minnesota, Ohio. 4. In what State is each of the following-named prominent cities located: Racine, Bangor, Allegheny, Charlotte, Cairo, Los Angeles, Shreveport, Fargo, Evansville, Ogdensburg. 5. In what foreign country, colony, or possession is each of the following-named prominent cities: Bremen, Buenos Ayres, Yokohama, Cape Town, Havre, Melbourne, Adrianople, Ottawa, Teheran, Panama.

Sec. 93. Second-grade examination, custom-house.—Age limit, 20 years or over; application form, 101; time allowed, four hours. This examination will be given for the positions of assistant weigher, messenger, and sampler.

Subjects.	Weights.
1. Spelling (second grade, see sec. 36).....	20
2. Arithmetic (second grade, see sec. 36).....	20
3. Letter writing (second grade, see sec. 36).....	20
4. Penmanship.....	20
5. Copying from plain copy (second grade, see sec. 36).....	20
Total	100

Sec. 94. Third-grade examination, custom-house.—Age limit, 20 years or over, but the Treasury Department desires eligibles for night inspector and all minor appointments between the ages of 21 and 55 years; application form, 101; time allowed, three hours. This examination will be given for the positions of watchman, night inspector, opener and packer, inspectress, foreman, janitor, attendant, porter, and classified laborer, and for the position of boatman, where educational qualifications are required.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37).....	20
2. Arithmetic (third grade, see sec. 37).....	20
3. Letter writing (third grade, see sec. 37).....	20
4. Penmanship	20
5. Copying from plain copy (third grade, see sec. 37)	20
Total	100

Sec. 95. Boatman, custom-house.—Except where educational qualifications are desired, boatmen will be given the noneducational or mechanical trades examination, for description of which see sec. 84.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37).....	8
2. Arithmetic (third grade, see sec. 37).....	8
3. Letter writing (third grade, see sec. 37).....	8
4. Penmanship	8
5. Copying from plain copy (third grade, see sec. 37).....	8
6. Age.....	6
7. Experience *	24
8. Character as a workman *	24
9. Physical condition *	6
Total	100

* Rated on Form 1093.

ENGINEER DEPARTMENT SERVICE.

Sec. 96. Positions under the Engineer Department are classified under two headings, those requiring an educational test and those requiring no educational test. Applications for the former class of positions should be filed with the Commission at Washington, D. C., and for the latter class of positions they should be filed with the local board of examiners for the Engineer Department located in the various engineer districts. The information furnished below will indicate to which class each position belongs.

(a) *The positions requiring an educational test are—*

Junior civil engineer, which includes inspector, surveyor, transit man, level man, sextant observer, computer, and recorder; clerk, including stenographer, typewriter, copyist, receiver of material, and draftsman.

In the case of recorders, inspectors, and others of equal or higher grade, *selected from the noneducational eligible lists prepared by local boards*, a diploma showing graduation in an engineering course of an approved technical school will be considered as equivalent to a junior engineer examination, and will make the holder eligible to promotion without examination to any junior engineer position after a year's probation, if services have been satisfactory and capability shown.

(b) *The positions requiring no educational tests are—*

Inspector whose pay does not exceed \$125 per month, or \$100 per month and subsistence.

Master, pilot, mate, engineer of steam vessels, and other similar positions which in private employ require a license from the Office of Steamboat Inspection, when the applicant is licensed.

All the mechanical trades: Master workman, baker, blaster, boatman, steersman, cement finisher, cement tester, cement worker, concrete finisher, cranesman, diver, dredge runner, dredge engineer, elevator conductor, leadsmen, lock and bridge tender, weaver, weaver of mats, motorman (including all steam engineers not licensed-engineers), pile driver, powderman, rigger, and recorder at \$75 per month or less, striker, telegraph and telephone lineman, calker's helper, watchman, valve tender, barge tender, porter, messenger, janitor, and similar positions not specified herein.

Sec. 97. Junior civil engineer, Engineer Department Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, two days of seven hours each. Subjects 1 and 2 will be given on the first day, and subjects 3 and 4 on the second day.

Entrance salary, \$720 to \$1,500. As to applying for this examination, see p. 4.

As far as practicable, all positions in the Departmental Service for which general civil engineering knowledge and experience are suitable will be filled from the junior civil engineer register.

Subjects.	Weights.
1. Pure and applied mathematics	15
2. Drawing	15
3. Use and care of field and office instruments.....	15
4. Practical questions in civil engineering.....	30
5. Technical education and experience *	25
Total	100

* Rated on Form 275.

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The following outline will indicate the general character of this examination: Subject 1 covers arithmetic, simple problems in plane geometry, algebra, including quadratics, logarithms, trigonometry, and mechanics.

Subject 2 will consist of an exercise in drawing to scale. The exercise is designed to test the competitor's ability as a draftsman, as well as to test his technical knowledge. Competitors must furnish themselves with a drawing board not less than 15 inches square, a T square and triangle, or two triangles, a protractor, one scale 1 inch to 50 feet and one $\frac{1}{4}$ -inch to the foot, ink, and pencil. Drawing paper will be furnished by the Commission.

Subject 3 covers the engineer's transit as such and also as an instrument in stadia work, the engineer's level, the sextant, the current meter, the planimeter, and other instruments. Four to six questions will be given. The competitor may select from the questions given, as specified on the sheet.

Subject 4 consists of eight questions covering construction and materials, of which competitors will be required to answer five, as specified on the sheet. These questions will be elementary and general in character, designed to test the competitor's fitness for any junior civil engineer position in the classified service.

Subject 5 covers (a) technical education; (b) practical knowledge of mechanical trades; (c) practical experience as a surveyor or civil engineer, or any position relative to such work; (d) age and present occupation.

Preference in certification will be given to legal residents of the district in which the vacancy occurs. If there are no eligibles in a district when a vacancy or vacancies occur, eligibles in adjoining districts will be certified for those positions.

No specimen questions can be furnished at this time.

Sec. 98. Civil and Electrical Engineer.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, three days. First two subjects will be given on the first day (seven hours); the third and fourth subjects on the second day (seven hours); and the fifth subject on the third day (five hours). The first four subjects are identical with those given for the junior civil engineer. (See sec. 97.) Persons taking both examinations will be required to take these subjects but once. Appointments may be made from the register established as the result of this examination to positions in any part of the classified service. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Mathematics	10
2. Drawing	10
3. Use and care of field and office instruments.....	5
4. Practical questions in civil engineering.....	10
5. Theoretical and practical questions in electrical engineering	40
6. Education and experience in civil engineering and in electrical engineering *.....	25
Total	100

* To be rated on Form 375.

Sec. 99. Mechanical and electrical engineer.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, three days. First two subjects will be given on the first day, seven hours; subjects three and four on the second day, seven hours; and subject five on the third day, five hours. From the register established as the result of this examination, appointments may be made to positions in any part of the classified service. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Pure and applied mathematics.....	10
2. Drafting	10
3. Practical calculations.....	5
4. Knowledge of materials.....	10
5. Theoretical and practical questions in electrical engineering.....	40
6. Education and experience in mechanical and electrical engineering*.....	25
Total	100

* To be rated on Form 375.

The fifth subject is identical with that given in the examination for civil and electrical engineering (see sec. 98).

Sec. 100. Clerical positions, Engineer Service, including stenographer, typewriter, etc.— Vacancies in these positions will be filled by certification from register of eligibles for the Departmental Service, and those who wish information in regard to such examinations should refer to the Departmental Service.

Draftsmen are selected from the junior civil engineer register of eligibles, or from the special registers of the Commission.

Sec. 101. Trades examinations, including all noneducational positions, Engineer Department Service.— For the positions named in (b) sec. 96 in the Engineer Department at large no educational test is required, but applicants are graded upon the elements of age, experience, and intelligence, character as a workman, and physical ability. Applicants for these positions should not request blanks or information from the Commission at Washington, but should address all communications to the secretary of the local board of United States civil-service examiners at the headquarters of the engineer district in which employment is desired.

Sec. 102. Persons desiring further and more specific information in regard to any of the positions in the noneducational class named above should make oral or written request upon the local board of examiners at the headquarters of the district in which employment is desired for an application blank and other information.

GENERAL LAND OFFICE SERVICE.

Sec. 103. This service includes various positions in general land offices throughout the United States. Applicants for appointment to these positions in Arizona and New Mexico must have some knowledge of Spanish.

The following-named positions in this service are unclassified:

Temporary clerks employed in United States local land offices to reduce testimony to writing in contest cases, not paid from Government funds.

Temporary clerks employed in the offices of surveyors-general, and paid from the funds deposited by individuals for surveying public lands.

The Department desires that residents of the States where the service is to be performed should be given preference in certification for appointment, and the Commission will endeavor to comply with such request. Land offices are located in the following-named States and Territories: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Idaho, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, Wisconsin, Wyoming.

Sec. 104. Clerk, qualified as stenographer and typewriter.—Age limit, 20 years or over; application form, 304; time allowed, eight hours. This examination will be given on the dates and at the places marked A and C in the schedule, sec. 9.

Subjects.	Weights.
1. Arithmetic (first grade, see sec. 35)	5
2. Penmanship	5
3. Letter writing (first grade, see sec. 35)	10
4. Elements of bookkeeping and accounts	5
5. Stenography (see sec. 78)	40
6. Typewriting:	
(a) Copying from rough draft (first grade, see sec. 35)	5
(b) Tabulating (see sec. 86)	5
(c) Copying and spacing (see sec. 86)	10
(d) Writing from dictation (see sec. 86)	15
Total.....	100

The following test will indicate the general character of the fourth subject:

FOURTH SUBJECT.—Elements of bookkeeping and accounts.

John Setty, a general merchant, had the following transactions with Thomas Watts, a farmer, during the month of February, 1899. On February 1, Watts owed Setty on account \$35. February 4, Setty bought of Watts 84 bus. of apples at 75 cts. per bushel, and 240 bus. of corn at 36 cts. per bushel. February 6, Setty sold Watts 48 lbs. of nails at 4½ cts. per pound, 28½ lbs. of sugar at 5½ cts. per pound, and 6 lbs. of coffee at 37½ cts. per pound. February 10, Setty gave Watts a note for \$25, due in 30 days. February 12, Watts bought of Setty 2 bbls. of flour at \$5.25 per barrel, 8 bus. of clover seed at \$6.75 per bushel, and 18 bus. of timothy seed at \$1.95 per bushel, receiving a discount of 10 per cent from these prices on total amount of bill.

February 16, Watts sold Setty 2½ tons of hay at \$9.50 per ton, 800 bus. of corn at 35 cts. per bushel, and 120 lbs. of pork at 10½ cts. per pound. February 20, Watts returned the clover seed bought on the 12th inst. and received credit for the same. February 24, Setty gave Watts a check for \$125. February 28, Watts completed 4 days of hauling for Setty at \$2.25 per day.

Make in the form below an itemized statement of this account as it should appear from the books of John Setty; make a proper heading; close the account, and bring down the balance as it should appear March 1, 1899.

..... in account with

Sec. 105. Register and receiver's clerk.—Age limit, 20 years or over; application form, 304; time allowed, two days of five hours each. First six subjects on the first day, and the remaining subjects on the second day. This examination may be taken on the date and at the places marked D in the schedule, sec. 9.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	10
2. Arithmetic (first grade, see sec. 35).....	15
3. Letter writing (first grade, see sec. 35).....	15
4. Penmanship	15
5. Copying from plain copy (first grade, see sec. 35).....	5
6. Copying from rough draft (first grade, see sec. 35).....	5
7. Public land laws of the United States	20
8. System of public land surveying.....	15
Total	100

The following questions and tests will indicate the general character of the seventh and eighth subjects:

PUBLIC LAND LAWS OF THE UNITED STATES.

1. Give the definition of the terms minimum and double minimum as applied to public lands, and state what lands are classed as double minimum. 2. Under what laws can title to the public lands of the United States in the various States and Territories be acquired? 3. When a relinquishment of a homestead entry is filed in a local land office, what action is required by the register? 4. Under what laws may additional homestead entries be made?

SYSTEM OF PUBLIC LAND SURVEYING.

1. Describe by smallest legal subdivisions all the lands contained in section 1 in a regular subdivision of a regular township, the southwest corner of which township is the initial point of the surveys of a base line and the sixth principal meridian. 2. What is a meander line, and between what points in a section are meander lines run? 3. How are townships and ranges numbered? 4. How is a given tract of the public lands described?

Sec. 106. Surveyor-general's clerk.—Age limit, 20 years or over; application form, 304; time allowed, two days. Five hours the first day for the first six subjects, and six hours the second day for remaining subjects. This examination may be taken on the date and at the places marked D in the schedule, sec. 9.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	5
2. Arithmetic (first grade, see sec. 35).....	15
3. Letter writing (first grade, see sec. 35).....	15
4. Penmanship	10
5. Copying from plain copy (first grade, see sec. 35).....	5
6. Copying from rough draft (first grade, see sec. 35).....	5
7. Public land law	10
8. Public land surveying	35
Total	100

The following questions and tests will indicate the general character of the seventh and eighth subjects:

PUBLIC LAND LAW.

1. Where are plats of public surveys kept for public information? **2.** How are entries of public agricultural land made of record in the local land office? **3.** How soon after the filing of a township plat in the local land office may final proof be accepted for land embraced therein? **4.** What notice is given of the filing of plat of survey in the local office, and by whom is such notice given?

PUBLIC LAND SURVEYING.

1. Illustrate by diagram and explain briefly the manner and order of running the exterior lines of a block of townships 34 miles square, whose south boundary, when run, will be the first standard parallel north, and whose west boundary will be the first guide meridian west of the sixth principal meridian, which principal meridian has already been established. **2.** Describe in the order of importance the different accessories allowed and the markings thereon in the survey of public lands on a corner stone located at the corner of sections 22, 23, 26, and 27, T. 31 S., R. 4 W., sixth principal meridian. Give field notes descriptive of all allowable accessories to such corner stone. **3.** (a) What meridians of water in or bordering on the public domain are required to be meandered? (b) Describe the method of running meander lines. **4.** The east boundary of section 6 in a township is 79.78 chains; the west boundary, 80 chains; the north boundary, 80.42 chains, and the south boundary, 80.10 chains; calculate the areas of each of the seven fractional lots in a regular subdivision of this section.

GOVERNMENT PRINTING SERVICE.

Sec. 107. (a) No applicant for the position of compositor, pressman, bookbinder, stereotyper, or electrotypewriter will be admitted to examination unless it is shown that he has served five years in the particular trade in which he desires to be employed, three of which years he must have served as an apprentice, and at least one year as a journeyman. The Commission reserves the right to have the statements of applicants and their vouchers verified whenever found necessary, and to require such additional evidence as may be deemed essential.

(b) It is the practice of the Government Printing Office to appoint men only to the positions of pressman, bookbinder, stereotyper, or electrotypewriter, but both men and women may be appointed to the position of compositor. Pressmen and compositors on the eligible registers for this service may also be certified to like positions in any part of the classified service. Clerical positions in this service will be filled from either the compositor or departmental clerk register.

(c) All examinations for the recognized trades in the Government Printing Office include a sheet upon which the applicant must furnish a detailed statement showing the office or offices in which he learned his trade, for whom and for how long he worked while an apprentice and while a journeyman, and the character of the work upon which he was engaged, etc. This statement is intended to furnish to the appointing officer the complete trade history of the applicant, and it therefore should be made as complete and comprehensive as possible.

(d) All applicants for trades positions in the Government Printing Service will be required to file statements on Form 1093 in reference to the trade or occupation for which they wish to be examined, together with certificates from persons for whom or with whom they have worked at the trade or occupation for which they wish to be examined. On the information furnished on this form the ratings for "experience" and "character as a workman" will be determined.

(e) Experience in all the recognized mechanical trades of the Government Printing Service will be marked according to the following scale:

Five years' experience	70	Nine years' experience.....	90
Six years' experience.....	75	Ten years' experience.....	94
Seven years' experience.....	80	Eleven years' experience.....	98
Eight years' experience.....	85	Twelve years' experience.....	100

Sec. 108. Bookbinder, Government Printing Service.—Age limit, 21 years or over; application form, 1093; time allowed, three hours. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37).....	15
2. Arithmetic (third grade, see sec. 37).....	15
3. Letter writing (third grade, see sec. 37).....	15
4. Penmanship.....	15
5. Copying from plain copy (third grade, see sec. 37).....	15
6. Experience*	10
7. Character as a workman*	15
Total	100

* Rated on Form 1093.

CLASSIFIED CIVIL SERVICE.

See. 109. Compositor, Government Printing Service.—Age limits, 21 years or over for males, and 18 years or over for females; application form, 1093; time allowed, five and one-half hours. As to applying for this examination, see p. 4. The same examination will be given for both the book and newspaper branch and the job-printing branch of this grade, with the exception that applicants for the job-printing branch will be examined on the subject "arrangement of work for job printing," and in determining the marks for this subject, if the mark on the subject of "arrangement of work for job printing," added to the mark on the subject "rough draft" and the sum divided by 2, is greater than the mark on "rough draft" alone, the average mark will be the credit given; otherwise the mark on the subject "rough draft" alone will be the credit to be given, but the exercises in the arrangement of work for job printers will accompany the examination papers as an exhibit to show the applicant's proficiency in that subject.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	5
2. Arithmetic (third grade, see sec. 37).....	5
3. Letter writing (third grade, see sec. 37).....	5
4. Penmanship.....	5
5. Copying from plain copy (third grade, see sec. 37).....	5
6. Abbreviations.....	5
7. Correcting proof	15
8. Tabulating	10
9. {Copying from rough draft (first grade, see sec. 35). 9. {Practical questions in job printing (optional for job printers only)	20
10. Experience	10
11. Character as a workman*	15
Total	100

* Rated on Form 1093.

The following questions and tests indicate the general character of the sixth, seventh, eighth, and ninth subjects:

ARRANGEMENT OF TITLE-PAGE—FOR JOB PRINTERS ONLY.

To the competitor.—Copy on the lines at the top of the accompanying sheet the paragraph below, properly capitalizing and punctuating it for a title-page. The size of the paper upon which the title-page is to be printed is 5 inches wide and 7½ inches long. Rule off a space the exact size of the paper, as indicated above. Then mark off the matter into lines, indicating the word or words to go in each by drawing a perpendicular line between the words, thus | |, and instead of giving size and style of type to be used, draw box, thus | |, indicating size of type and length of line by width and length of box. Place in each box in figures the numbers of the words to be inserted therein, but do not write the words themselves. No transposition of the matter will be allowed. See illustration below.

EXERCISE.

united states civil service commission. rules for marking examination papers together with notes on the rules and regulations for the central board of examiners. approved by the commission october 17 1895 washington government printing office 1895

(This illustration is to act as a guide for competitors in carrying out above instructions.)

the vision or hell purgatory and paradise of dante alighieri translated by the rev h f cary & m new york thomas y crowell and co 1897
 The | Vision; | or | Hell, Purgatory, and Paradise, | of | Dante Alighieri. | Translated by | the Rev. H. F. Cary, A. M. | New York: | Thomas Y. Crowell & Co. | 1897.

ABBREVIATIONS.

(a) Write in full the word or words represented by the following signs and abbreviations: Ala.; evt.; bro.; lhd.; mme.; pp.; rt. hon.; viz.; ry.; msj.

(b) Write the proper abbreviation or sign for each of the following: January; colonel; balance; agent; railway; longitude; debtor; document; cavalry; article.

CORRECTING PROOF.

For this exercise the competitor is given a photolithographic sheet of proof on which corrections have been noted by the proof reader, and he is required to explain in writing the corrections indicated by the proof reader on the printed proof sheet. The exercise is designed chiefly to test the competitor's ability to follow the instructions of the proof reader and to interpret his marks. The corrections to be made are indicated in the same manner as in ordinary proof in a printing office. For convenience each word or group of words to be corrected is numbered on the sheet, and the competitor, in making the correction, writes the number of the word to be corrected, stating opposite it what correction is required—that is, what letter or letters are to be inserted, omitted, etc., or what other changes are indicated by the marks of the proof reader.

TABULATING.

Arrange and copy the matter in the paragraph below in a 5-column table, with appropriate general head and box heads. The table should be 30 ems nonpareil wide, the rules 4 to nonpareil, with an periods and commas. Each figure column to bear off from the rules an en quad on the right and an em on the left. Give the cast of each column in the table. [In marking this exercise form and cast will be weighted equally.]

Below is given the population of certain States of the United States, as shown by the census reports of 1860, 1870, 1880, and 1890: The population of Alabama was 964,201 in 1860, 996,992 in 1870, 1,262,595 in 1880, and 1,513,017 in 1890; the population of Arkansas for the same four years, respectively, was 435,450, 484,471, 802,525, 1,128,179; California, 379,994, 560,247, 884,894, 1,208,130; Colorado, 34,277, 39,864, 194,327, 419,198; Connecticut, 460,147, 537,454, 622,700, 746,258; Delaware, 112,216, 125,015, 146,608, 168,493.

Sec. 110. Electrotypist-finisher, Government Printing Service.—Age limit, 21 years or over; application form, 1093; time allowed, four hours. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37).....	7.5
2. Arithmetic (third grade, see sec. 37).....	7.5
3. Letter writing (third grade, see sec. 37).....	7.5
4. Penmanship.....	7.5
5. Copying from plain copy (third grade, see sec. 37).....	7.5
6. Correction of proof (compositor, see sec. 109).....	37.5
7. Experience*.....	10
8. Character as a workman*.....	15
Total.....	100

* Rated on Form 1093.

Sec. 111. Electrotypist-molder, Government Printing Service.—Age limit, 21 years or over; application form, 1093; time allowed, three hours. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37).....	15
2. Arithmetic (third grade, see sec. 37).....	15
3. Letter-writing (third grade, see sec. 37).....	15
4. Penmanship.....	15
5. Copying from plain copy (third grade, see sec. 37).....	15
6. Experience*.....	10
7. Character as a workman*.....	15
Total	100

* Rated on Form 1093.

Sec. 112. Press feeder (cylinder or platen) Government Printing Service.—Age limits, male 21 years or over, female 18 years or over; application forms, 304 and 1145; time allowed, three hours. This examination may be taken on the dates and at the places marked A, B, or C in the schedule, sec. 9.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37).....	16
2. Arithmetic (third grade, see sec. 37).....	16
3. Letter-writing (third grade, see sec. 37).....	16
4. Penmanship.....	16
5. Copying from plain copy (third grade, see sec. 37).....	16
6. Experience.....	20
Total	100

The element of experience will be rated upon the statement and vouchers furnished on Form 1145. In answer to question 13 of vouchers Nos. 1 and 2, the competitor is required to furnish a certificate showing that he is able to feed a sheet not less than 24 by 38 inches in size. Credit will be allowed for experience in accordance with the following scale: For six month's experience, 50; for one year, 70; for one and one-half years, 80; for two years, 90; for two and one-half years

95, and for three years 100 per cent. A proportional credit will be given for fractional parts of the periods mentioned if the competitor has had more than six months' experience. No credit will be allowed for experience gained subsequent to the date of taking the educational part of the examination, and no credit will be given for less than six months' experience. No application will be accepted which does not show that the applicant has had at least six months' experience.

Sec. 113. Pressman, Government Printing Service.—Age limit, 21 years or over; application form, 1093; time allowed, three hours. As to applying for this examination see p. 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	15
2. Arithmetic (third grade, see sec. 37)	15
3. Letter writing (third grade, see sec. 37)	15
4. Penmanship	15
5. Copying from plain copy (third grade, see sec. 37)	15
6. Experience*	10
7. Character as a workman*	15
Total	100

* Rated on Form 1093.

Sec. 114. Proof reader, Government Printing Service.—The position of proof reader in the Government Printing Office is filled by the promotion of compositors, and hence no examination for it will be given by the Commission.

Sec. 115. Skilled laborer, Government Printing Service.—Age limits, female 18 years or over, male 21 years or over; application form, 304; time allowed; three hours. This examination may be taken on the dates and at the places marked A, B, or C in the schedule, sec. 9. Attention is invited to the fact that this examination has been changed so that experience in printing office work is no longer an element.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	20
2. Arithmetic (third grade, see sec. 37)	20
3. Letter writing (third grade, see sec. 37)	20
4. Penmanship	20
5. Copying from plain copy (third grade, see sec. 37)	20
Total	100

Sec. 116. Stereotyper, Government Printing Service.—Age limit, 21 years or over; application form, 1093; time allowed, three hours. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Spelling (third grade, see sec. 37)	15
2. Arithmetic (third grade, see sec. 37)	15
3. Letter writing (third grade, see sec. 37)	15
4. Penmanship	15
5. Copying from plain copy (third grade, see sec. 37)	15
6. Experience*	10
7. Character as a workman*	15
Total	100

* Rated on Form 1093.

INDIAN SERVICE.

Sec. 117. The written examinations for which general registers are maintained for this service are as follows: Farmer, industrial teacher, kindergarten teacher, matron, manual-training teacher, nurse, seamstress, physician, and teacher.

Persons entering the Indian Service must understand when they accept the appointment that the conditions of life in an Indian boarding school differ from ordinary school or home life; that efficiency and success can come only to those who are interested in the education of the Indian, and who are physically capable of the arduous duties to be performed, and willing to do whatever is necessary for the good of all concerned. No person should offer himself for a position in this service who is encumbered with the care of children or invalids, or is in any way hampered in giving to the Government full time and best service. It is the desire of the Indian Office not to appoint employees who have children or other dependents who would have to live with them at the agency or school. Employees pay their own traveling expenses to the school and for their board while there; but quarters will be provided at the school. If necessary, two or more persons must occupy one room, and employees with families must content themselves with the same space, unless otherwise ordered by the Commissioner of Indian Affairs.

Vacancies in clerical positions in the Indian Service will be filled by certification from the departmental clerk or other appropriate registers of the Commission, and no separate or special examination for them will be allowed; hence persons who desire to become eligible to clerical positions in the Indian Service should apply for the clerk examination, Departmental Service.

Vacancies in positions requiring experience in trades or mechanical occupations will be filled from trades examinations, the subjects of which are experience and physical ability.

The age limitations do not apply to the wife of a superintendent of an Indian school who applies for an examination for the position of teacher (all kinds) or matron in the same school.

Sec. 118. Day-school inspector, Indian Service.—Age limit, 25 to 55 years; application forms, 304 and 375. An examination will be held for this position only when eligibles are needed, and will be announced through the public press. Salary, \$1,200 per annum. No specimen questions can be furnished.

Sec. 119. Disciplinarian, Indian Service.—Age limit, 25 to 55 years; application forms, 304 and 375. An examination will be held for this position only when eligibles are needed, and will be announced through the public press. Salary, \$600 to \$1,200 per annum. No specimen questions can be furnished.

Sec. 120. Farmer, Indian Service.—Age limit, 20 years or over; application form, 1093 (applicants who desire to take both the farmer and industrial teacher examinations need file but one application). Time allowed, five hours; entrance salary, \$600. As to applying for this examination, see p. 4. Applicants for the position of farmer or additional farmer must have had immediately preceding the date of their applications two years' actual practical experience in farming in the State or Territory in which, or in a State or Territory adjoining that in which employment is sought. Practical questions in irrigation will be given as an optional subject, and a separate register of eligibles will be established of those who are qualified to practice irrigation farming.

Subjects.	Weights.
1. Penmanship	5
2. Spelling and copying	5
3. Farm economy	25
4. Keeping accounts	10
5. Practical questions in farming	35
6. Experience in farming*	20
Total	100

* Rated on Form 1093.

The following questions and tests indicate the general character of this examination:

PENMANSHIP.

N. B.—The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise on spelling and copying.

CLASSIFIED CIVIL SERVICE.

SPELLING AND COPYING.

Make a smooth copy of the following exercise, correcting all errors in orthography or spelling. No changes are permitted, except those required to correct errors in orthography. Spelling, use of capitals, and all omissions and mistakes will be taken into consideration in marking this subject. Penmanship will be marked on this sheet:

Water is the most abundant substance found in living crops. Not only does it form by far the largest proportion of all fresh vegetable substance, but, on account of loss through evaporation from the leaves of growing plants and the necessity of replacing this loss, thirty or forty times more water is needed during the growing period of a crop than is contained in the crop when harvested. Plants require a large amount of water for their life and growth, and it is necessary that the supply should be abundant at all times.

FARM ECONOMY.

1. Name all the tools and materials necessary, and describe fully the method of using them, in the construction of a substantial barbed-wire fence. **2.** Describe the essential parts of a threshing machine for threshing small grain, and explain its mode of operation. **3.** Name two kinds of timber most suitable for each of the following uses: House or barn sills, shingles, fence posts, house flooring, bending work. **4.** Describe in detail the various essential parts of a common lifting pump, and state the principle of its operation. **5.** Define each of the following terms as applied to farm implements, etc.: Doubletree, tugs, moldboard, kingbolt, felloes.

KEEPING ACCOUNTS.

During the month of August, 1896, James Thompson, a farmer, had the following transactions with W. H. Riley, a general merchant:

On August 2 Thompson bought from Riley 40 cakes soap at 4½ cents, 32 pounds sugar at 5½ cents, and 3 pounds tea at 45 cents. On August 6 Thompson sold Riley 8½ tons hay at \$13.20 a ton, and 56 bushels wheat at 89 cents. On August 11 Thompson bought of Riley 22 yards muslin at 9½ cents, 48 yards calico at 6½ cents, and 4 spools thread at 5 cents. On August 15 Thompson bought of Riley 40 pounds rice at 5½ cents, 2 sacks flour at \$1.48, 1 suit clothes at \$12, and sold to him 48 bushels barley at 56 cents. On August 24 Thompson bought of Riley 2 plows at \$3.75, 1 harrow at \$14.50, and 1 wagon at \$38. On August 27 Thompson sold Riley 4 bushels potatoes at 45 cents, and bought of him 1 whip at 65 cents. On August 31 Riley paid Thompson the amount due him in cash.

Make an itemized statement of the entries above as they should appear on a statement of account current taken from the books of Thompson. Make proper heading and close the account.

PRACTICAL QUESTIONS IN FARMING.

- 1.** Explain in detail a plan commonly practiced in irrigating fields of wheat or other sowed grain.
- 2.** State all the advantages or benefits that are derived from the cultivation or growing of rowed crops.
- 3.** Name five garden plants or vegetables which may be planted or transplanted in the open ground before all danger of frost is past. Name five that should not be planted or transplanted until the ground is quite warm.
- 4.** Name three insects especially detrimental to farm or orchard crops, and state the most successful means of combating or destroying each.
- 5.** Give full directions for the proper feeding, care, and management of a herd of milch cows on an Indian school farm.

Sec. 121. Industrial-teacher examination, Indian Service.—Age limit, 20 years or over; application form, 1093 (applicants who desire to take both the farmer and industrial-teacher examinations need file but one application); time allowed, five hours. Entrance salary, \$600. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Penmanship	10
2. Spelling and copying	10
3. Farm economy	10
4. Keeping accounts	10
5. Practical questions in carpentry and blacksmithing	20
6. Practical questions in farming	40
Total.....	100

For specimen questions indicating the scope of subjects 1, 2, 3, 4, and 6, see farmer examination, sec. 120. No specimen questions of the fifth subject can be furnished at this time.

Sec. 122. Kindergarten teacher, Indian Service.—Age limit, 20 years or over. The age limitation does not apply to the wife of a superintendent of an Indian school who applies for an examination for the position of kindergarten teacher or matron in the same school. Application forms, 304 and 375. Time allowed, two days of five hours each, the first seven subjects being given on the first day, and the remaining subjects on the second day. Entrance salary, \$600. Competitors should bring a pair of small scissors to the examination for work in paper cutting and a needle for mat weaving. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Penmanship.....	5
2. Spelling and copying	5
3. Pedagogy	10
4. Arithmetic and form study	10
5. Language	5
6. Geography	5
7. Nature study	5
8. Drawing	10
9. Physiology and hygiene.....	5
10. Use of kindergarten materials.....	15
11. Songs, games, and stories.....	15
12. Psychology of childhood.....	10
Total	100

The following questions and tests indicate the general character of this examination:

PENMANSHIP.

N. B.—The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise on spelling and copying.

SPELLING AND COPYING.

Make a smooth copy of the following exercise, correcting all errors in orthography and capitalizing properly. Write in full all abbreviated words. No changes in phraseology are permitted, except those necessary to correct errors in orthography and capitalization, and to write in full abbreviated words:

The school system should be absolutely emancipated from partyism politics and completely disassociated from municipal business. But we think the appointments should be made by some one person rather than by a board. The mayor is the representative of the whole city and all its interests. While not chosen with reference to the interests of the schools, he may be assumed to have information as to the fitness of citizens for particular responsibilities and to be desirous of promoting the educational interests of the people. If he is given the power of appointment he should be particularly enjoined by law to consider only the fitness of individuals, and to pay no regard to party affiliations unless it be to see that no one party has an overwhelming preponderance in the board.

PEDAGOGY.

N. B.—In marking the essay, style or manner of expression, together with adherence to and treatment of the subject given, will be considered.

Write an essay of not less than 150 words on the ethical or moral value of kindergarten training, giving some of the methods by which ethics may properly be taught in the kindergarten.

ARITHMETIC AND FORM STUDY.

1. Discuss fully the value and use of the fifth gift in developing a knowledge of fractions.
2. Discuss fully the value and use of the seventh gift in developing concepts of plane figures.

LANGUAGE.

Discuss fully the relation of kindergarten instruction to the teaching of primary reading.

GEOGRAPHY.

Write an essay of not less than 150 words, describing fully a proper method to employ in teaching kindergarten and primary pupils to recognize and name the natural geographical divisions of water.

NATURE STUDY.

Write an essay of not less than 150 words on the following topic: The peculiarities, habits, etc., of the common house fly as one should teach them to kindergarten pupils.

DRAWING.

N. B.—The exercises of this subject are designed chiefly to test the competitor's skill in graphic, free-hand sketching on the blackboard in illustrating reading, language, and other lessons for primary pupils. Both the conception and the execution of the sketches will be considered in marking the exercises of this subject. The sketches or drawings must be free-hand and drawn with pencil.

1. Draw an outline sketch of a child trying to catch a butterfly with a net.
2. Draw outline sketches of a common rolling-pin, a pumpkin, and a pansy blossom.
3. Sketch an old-fashioned well, with the windlass and bucket visible.

CLASSIFIED CIVIL SERVICE.

PHYSIOLOGY AND HYGIENE.

Write an essay of not less than 150 words on proper muscular exercises suited to the health and strength of young pupils.

USE OF KINDERGARTEN MATERIALS.

NOTE.—The examiner will permit the competitor to select from a supply of kindergarten material such material as may be necessary in performing the work required. The exercises in this subject are designed to test the competitor's knowledge of kindergarten forms or designs and material and her skill and ability in using them in practical work. The forms or designs should be sufficiently elaborate or difficult to show the competitor's ability and skill of execution to the best advantage, yet not so complex as to require an undue length of time to complete them.

1. Make a symmetrical form or form of beauty in coloring, combining squares, isosceles, and equilateral triangles. (Use colored pencils.) 2. Make a form of beauty in paper folding. 3. Make a symmetrical form or form of beauty in parquetry work, mounting the work on the back of this sheet.

SONGS, GAMES, AND STORIES.

1. Give the words and describe in detail the movements in a kindergarten song descriptive of a rain storm. 2. Write a short story on industry and perseverance suitable to be related in kindergarten work.

PSYCHOLOGY OF CHILDHOOD.

Write an essay of not less than 150 words on the psychological principles underlying the use of the occupations of paper interlacing and mat weaving in kindergarten work.

Sec. 123. Manual training teacher, Indian Service.—Age limit, 20 years or over. Application forms, 304 and 375. Time allowed, two days of six hours each. Entrance salary, \$600. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Penmanship	5
2. Spelling and copying	5
3. Methods of manual training	20
4. Arithmetic	20
5. Geography	5
6. Industrial economy	15
7. Industrial drawing	10
8. Free-hand drawing	10
9. Physics	10
Total	100

The following questions and tests indicate the general character of this examination:

PENMANSHIP.

N. B.—The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise on spelling and copying.

SPELLING AND COPYING.

Make a smooth copy of the following exercise, correcting all errors in orthography and capitalizing properly. Write in full all abbreviated words. No changes in phraseology are permitted, except those necessary to correct errors in orthography and capitalization and to write in full abbreviated words.

The school system should be absolutely emancipated from partisan politics and completely disassociated from municipal business. But we think the appointments should be made by some one person rather than by a board. The mayor is the representative of the whole city and all its interests. While not chosen with reference to the interests of the schools, he may be assumed to have information as to the fitness of citizens for particular responsibilities and to be desirous of promoting the educational interests of the people. If he is given the power of appointment he should be particularly enjoined by law to consider only the fitness of individuals, and to pay no regard to party affiliations unless it be to see that no one party has an overwhelming preponderance in the board.

METHODS OF MANUAL TRAINING.

N. B.—In marking the essays, style or manner of expression, together with adherence to and treatment of the subject given, will be considered.

Write a brief essay on each of the following topics: 1. A brief description of the tools, appliances, and accommodations necessary for the instruction of a class of ten pupils in woodworking. 2. Describe fully the details of a lesson in nailing. 3. Describe fully the details of a lesson on the use of the file in metal working.

ARITHMETIC.

TOPICAL TEST.

Write an essay of not less than 150 words, stating in detail a proper method of presenting to a class of boys the subject of the measurements of brick and stone work.

TEXTUAL TEST.

- 1.** The interest on two notes together at their maturity without grace amounted to \$20.80. One of the notes was given for \$840 for 3 months at 6 per cent, and the other was given for \$960 for 2 months. What rate of interest did the second note bear? **2.** A piece of timber is 48 feet long and 9 inches thick, and tapers uniformly from a width of 18 inches at one end to a width of 10 inches at the other. How many board feet does it contain? **3.** How many gallons will a cylindrical cistern contain which is 5 feet in diameter and 8 $\frac{1}{2}$ feet deep? (1 gallon = 231 cubic inches, $\pi=3.1416$.) **4.** How many horsepower can be developed from a stream of water which flows at the rate of 6,000 cubic feet per minute, with a perpendicular fall of 9 $\frac{1}{2}$ feet, if the water wheel utilizes 88 per cent of the theoretical power? (1 cubic foot water = 62 $\frac{1}{2}$ pounds; 1 horsepower = 550 pounds falling 1 foot in 1 second.)

GEOGRAPHY.

Write a brief essay on each of the following topics:

- 1.** Volcanoes; their nature, formation, distribution, characteristics, etc. **2.** A description of the chief timber-producing sections of the United States, stating the principal kinds of timber produced in each. **3.** Compare the States of Texas and Michigan as to size, climate, physical features, natural resources, relative advantages for manufacturing, commerce, etc.

INDUSTRIAL ECONOMY.

- 1.** Describe fully all the essential parts of a turning lathe for woodwork, and explain fully how to use it. **2.** Describe fully how to sharpen and adjust a jack plane for soft wood. **3.** Describe fully the process of making and setting a wagon tire. **4.** Describe the special properties and name two important industrial uses of each of the following: Steel, copper, zinc, lead, graphite. **5.** Describe fully the process of joining wood by means of glue.

INDUSTRIAL DRAWING.

Design and make complete working drawings showing all the details of the construction of a simple wooden mantel. Make drawings to a scale of three-fourths inch to the foot.

FREE-HAND DRAWING.

- 1.** Make a sketch of a stepladder having six steps and a platform at the top. **2.** Make a copy of a given design, enlarging it one and one-half times. **3.** Make a copy of a given picture, enlarging it one and one-half times.

PHYSICS.

- 1.** What is a machine? Enumerate the various classes of simple machines. **2.** State the laws relating to the pressure, volume, and temperature of a gas. **3.** Describe a two-fluid galvanic cell and explain the principles on which its action depends. **4.** What is meant by refraction of light? Describe an experiment for showing it. **5.** Enumerate the effects of heat on bodies.

Sec. 124. Matron, Indian Service.—Age limit, 20 years or over (the age limitation does not apply to the wife of a superintendent of an Indian school who applies for an examination for the position of teacher or matron in the same school); application form, 1093; (applicants who desire to take both the matron and seamstress examinations need file but one application); time allowed, five hours. Entrance salary, \$450 to \$720. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Penmanship	10
2. Spelling and copying	10
3. Domestic economy	30
4. Keeping accounts	20
5. Nursery management	30
Total	100

The following questions and tests indicate the general character of this examination:

PENMANSHIP.

N. B.—The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise on spelling and copying.

CLASSIFIED CIVIL SERVICE.

SPELLING AND COPYING.

Make a smooth copy of the following exercise, correcting all errors in orthography or spelling. No changes are permitted except those required to correct errors in orthography. Spelling, use of capitals, and all omissions and mistakes will be taken into consideration in marking this subject. Penmanship will be marked on this sheet:

The industrial training of girls is, perhaps, of even more importance than that of boys; for the whole economic management of the household rests on the woman. The health, morals, habits and happiness of the family are in her hands, much more than in those of the man, on the woman's knowledge or ignorance of household economics, food, cooking, and of the laws of health, largely depends the difference between the economy of wastefulness, comfort, or discomfort, health or disease, cleanliness or squalor, prosperity or poverty of the household.

DOMESTIC ECONOMY.

Write a brief essay on each of the following topics:

1. Discuss fully the means a matron should adopt to secure to each girl pupil during the school year the greatest possible amount of experience in each of the industrial departments of the school.
2. Discuss fully some of the methods you would employ in preserving fruits, and state how you would teach those methods to the Indian pupils under your care.

KEEPING ACCOUNTS.

During March, 1890, the matron at an Indian school received and issued the following dormitory supplies: On March 2 she received 6 dozen towels, at 1½ cents each; 8 dozen cakes toilet soap, at 48 cents a dozen, and 3½ dozen sheets, at 80 cents each. On March 7 she issued 2 dozen towels, 1½ dozen cakes toilet soap, and ½ dozen sheets. On March 10 she received 2 dozen pillows, at \$1.10 each, and 5 dozen combs, at 84 cents a dozen. On March 14 she issued 1½ dozen towels, ½ dozen cakes toilet soap, 16 combs, and 5 pillows. On March 18 she received 2½ dozen toothbrushes, at 16 cents each; 2 dozen hairbrushes, at 35 cents each, and 1½ dozen hand mirrors, at 17 cents each. On March 21 she issued 14 toothbrushes, 16 hairbrushes, and 9 hand mirrors. On March 28 she issued 16 cakes toilet soap and 5 combs. Allow the same prices for supplies issued as received. Make an itemized statement of the entries above under proper headings, and show the total value of supplies in the matron's possession on April 1, 1890. (In the examination a printed form for this table will be given.)

NURSERY MANAGEMENT.

Write a brief essay on each of the following topics:

1. State in detail the manner in which you would keep the pupils' infirmary or sick room well ventilated and thoroughly disinfected.
2. Discuss the necessity and beneficial effects of teaching Indian pupils how to care properly for the sick.

Sec. 125. Physician, Indian Service.—Age limit, 25 to 55 years; application forms, 304 and 375; time allowed, seven hours. Entrance salary, \$720 to \$1,200 per annum. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Letter writing	5
2. Anatomy and physiology	15
3. Chemistry, materia medica, and therapeutics	10
4. General pathology and theory and practice of medicine	25
5. Surgery	20
6. Bacteriology and hygiene	10
7. Obstetrics and gynecology	15
Total	100

The following questions and tests indicate the general character of this examination:

LETTER WRITING.

Write a letter of not less than 150 words giving your views as to the prophylaxis applicable to tuberculosis. This exercise is designed chiefly to test the competitor's skill in simple English composition. In marking the letter, its errors in form and address, in spelling, capitalization, punctuation, syntax, and style, and its adherence to the subject, will be considered.

ANATOMY AND PHYSIOLOGY.

1. Give the origin, course, and branches of any one of the following arteries: Brachial, temporal, left common carotid.
2. Differentiate between serous and mucous membranes.
3. Name and describe the glands of the small intestine, and give the functions of each one named.
4. Name the conditions, normal and pathological, which retard, suspend, or prevent the coagulation of the blood.
5. Describe urea, including composition, average quantity excreted daily, causes of variations in quantity, and a method of quantitative estimation.

CHEMISTRY, MATERIA MEDICA, AND THERAPEUTICS.

1. What is the difference between fixed and essential oils? Give an example of each. By what simple method may the one be determined from the other? **2.** Describe the element iodine, giving its source, physical characteristics, chemical properties, and official preparations. **3.** Describe a test for the presence of each of the following: (a) Sugar in urine; (b) bile, either test for pigment, or for biliary salts; (c) albumen; (d) blood-coloring matters. **4.** Define antiseptic, and name the remedies of this class. **5.** Give the formula for peroxid of hydrogen and its therapeutic uses.

GENERAL PATHOLOGY AND THEORY AND PRACTICE OF MEDICINE.

1. Give the causes and pathology of amyloid degeneration, and name the organs most frequently affected. **2.** Describe influenza, giving symptoms, complications, and treatment. **3.** Describe aphasia, including its pathology. **4.** Give the pathology and treatment of angina pectoris. **5.** Give the symptoms preceding the appearance of the eruption of a typical case of (a) rubella; (b) scarlatina. On what day does the eruption appear in each?

SURGERY.

1. Give the cause of gangrene. What are the indications for amputation in gangrene? **2.** What are the contraindications for the use of ether as an anesthetic? Under what conditions is chloroform narcosis preferable to ether? **3.** Describe conjunctivitis, enumerating its various forms, and giving the causes and treatment for each form named. **4.** What complications of fractures may occur? Give the treatment in each complication named. **5.** Give the causes and treatment of ankylosis.

BACTERIOLOGY AND HYGIENE.

1. Name the organisms which are chiefly concerned in the process of suppuration, and describe each one named. **2.** Describe a method for the examination of sputum for tubercle bacilli. **3.** What is the difference between antiseptics and disinfectants? Name some of the principal substances used for each purpose. Describe definitely how a room should be fumigated after having contained an infectious case. **4.** How may ammonia and nitrates be detected in drinking water, and what is the significance of each? **5.** What climate is best adapted to sufferers from phthisis pulmonalis? State the reasons for the answer given.

OBSTETRICS AND GYNECOLOGY.

1. What conditions are frequently mistaken for pregnancy? Give the differential diagnosis in each case. **2.** What changes occur in the blood of a pregnant woman during gestation? **3.** Give the diagnosis and treatment of prolapse of the fundus. **4.** What are the symptoms and treatment of an inevitable abortion? **5.** Name the malformations of the uterus, and describe any two of them.

Sec. 126. Seamstress, Indian Service.—Age limit, 20 years or over; application form, 1093 (applicants who desire to take both the matron and seamstress examinations need file but one application); time allowed, five hours. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Penmanship.....	10
2. Spelling and copying (matron, see sec. 124)	10
3. Domestic economy (matron, see sec. 124)	30
4. Keeping accounts (matron, see sec. 124)	20
5. Cutting, fitting, and sewing	30
Total	100

NOTE.—This examination is identical with the matron examination, except that in the fifth subject competitors are required to write an essay on each two topics relating to cutting, fitting, and sewing, in lieu of the subject of nursery management. The following tests will indicate the general character of the examination in the fifth subject:

CUTTING, FITTING, AND SEWING.

Write a brief essay on each of the following topics:

1. Give in detail practical methods for cutting, fitting, and making three different garments in the everyday outfit for a girl. **2.** Discuss the necessity of teaching Indian girls expertness in sewing, especially by hand.

Sec. 127. Supervisor of Indian schools, Indian Service.—Age limit, 25 to 55 years; application forms, 304 and 375. This examination will be given only when eligibles are needed, and will be announced through the public press. Salary, \$1,500 per annum, in addition to \$3 per diem for expenses. There are only three positions of this class in the Indian service. No specimen examination questions can be furnished.

Sec. 128. Teacher, Indian Service.—Age limit, 20 years or over (the age limit does not apply to the wife of a superintendent of an Indian school who applies for the

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position of teacher or matron in the same school); application forms, 304 and 375; time allowed, two days—seven hours on the first day and six hours on the second day. Entrance salary, \$500 to \$1,200 per annum. It is the practice of the Department to fill vacancies in the grades of superintendent and principal teacher by promotion from the grade of teacher. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Arithmetic and elementary algebra.....	20
2. Pedagogy	15
3. Penmanship.....	5
4. Spelling and copying.....	5
5. English grammar and analysis.....	10
6. Geography	10
7. History and government of the United States.....	10
8. Drawing	10
9. Physiology and hygiene.....	5
10. Nature study.....	5
11. American literature.....	5
Total	100

The following questions and tests will indicate the general character of this examination :

PENMANSHIP.

N. B.—The mark on penmanship will be determined by legibility, rapidity, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the exercise on spelling and copying.

SPELLING AND COPYING.

Make on this sheet a smooth copy of the following exercise, correcting all errors in orthography and capitalizing properly. Write in full all abbreviated words. No changes in phraseology are permitted, except those necessary to correct errors in orthography and capitalization and to write in full abbreviated words.

The school system should be absolutely emancipated from partisan politics and completely disassociated from municipal business. But we think the appointments should be made by some one person rather than by a board. The mayor is the representative of the whole city and all its interests. While not chosen with reference to the interests of the schools, he may be assumed to have information as to the fitness of citizens for particular responsibilities and to be desirous of promoting the educational interests of the people. If he is given the power of appointment he should be particularly enjoined by law to consider only the fitness of individuals, and to pay no regard to party affiliations unless it be to see that no one party has an overwhelming preponderance in the board.

PEDAGOGY.

Write an essay of not less than 150 words, discussing in detail the necessity of thorough methods of language study in primary work, and stating fully the methods which, in your opinion, should be used in teaching this subject to Indian pupils.

ARITHMETIC AND ELEMENTARY ALGEBRA.

1. Write an essay of not less than 150 words, presenting in detail a model lesson in common fractions for advanced primary pupils, showing fully your method of conducting the recitation, etc. (A credit of 30 per cent is assigned to this question.) 2. An Indian school is located upon a tract of land in the form of a rectangle three times as long as it is wide and containing 30 acres. If $\frac{1}{2}$ of the length of the tract be set off for school and play grounds, what will be the dimensions in feet of the tract thus set off? 3. The longitude of Washington is $77^{\circ} 0' 15''$ west, and that of Rome $12^{\circ} 28' 12''$ east. When it is 4 o'clock p. m. at Washington, what time is it at Rome? 4. If 320 francs are equal to \$61.76, and \$357 are equal to 1,500 marks, how many francs are equal to 91,868 marks? 5. A note for \$1,320, payable in six months without grace, was to draw interest at 6 per cent per annum until due, and if not then paid was to draw 8 per cent simple interest on the principal from the time it was due until paid. If the total amount, principal and interest, was \$1,447.60 at the time of payment, how long did the note run? (Compute interest on the basis of 360 days to the year.) 6. A field is in the form of an isosceles triangle. The two sides are 26 rods each, and the base is 20 rods. What is the altitude? 7. Find the F. C. D. of $2x + 3$, $2x^2 + x - 3$, and $4x^3 + 8x^2 - x - 6$. 8. The sum of two numbers is 70. The first divided by the second gives a quotient of 2 and a remainder of 1. What are the numbers? Solve by algebra.

ENGLISH GRAMMAR AND ANALYSIS.

This subject comprises an essay and practical questions and tests.

GEOGRAPHY.

1. Discuss the value and use of supplementary reading in teaching primary geography. 2. Describe Alaska as to location, physical features, climate, natural resources, etc. 3. Compare Ohio and Cuba as to climate, physical features, vegetation, leading industries, character of inhabitants, form of government, etc.

NATURE STUDY.

1. Discuss the peculiarities, characteristics, habits, etc., of the bobolink, including food, mode of nesting and rearing young, etc. (Present this topic in detail as to primary pupils.) 2. Discuss the advantages, in your opinion, of nature study to Indian children.

HISTORY AND GOVERNMENT OF THE UNITED STATES.

Write a brief essay on each of the following topics:

1. The advantages and disadvantages of the topical method of teaching the history of the United States.
2. The chief purposes to be achieved and the method to be employed in giving instruction in the civil government of the United States.
3. An account of the causes and results of the war of 1812.

DRAWING.

The drawings must be free-hand and made with pencil.

1. Sketch to represent a boy playing ball.
2. Make outline sketches to represent a dog's head, a pear, and a daisy.
3. Draw an ornamental design, using the conventionalized clover leaf four times as the unit of design. Design to be 3 inches square when complete.

AMERICAN LITERATURE.

Write an essay of not less than 150 words on *one* (and one only) of the following topics: 1. Name five American prose works (not novels) which you consider best adapted to schoolroom use in connection with elementary language study, name the author of each work, and give a brief outline of any one (and only one) of the works named, bringing out those features which render it especially valuable in the schoolroom. 2. Name three poems of Whittier adapted to school use, reproduce in prose the substance of the essential parts of one of them, and state how you would teach the poem in connection with elementary language study.

PHYSIOLOGY AND HYGIENE.

1. State the essential differences between voluntary and involuntary muscle (*a*) as to structure, (*b*) as to function.
2. Enumerate five parts of the eye and name one function of each part, respectively. Give directions for care and use of the eyes.
3. Describe fully the capillaries, including their functions.
4. Describe the effects of alcoholic beverages (*a*) taken in assimilable quantities, (*b*) taken excessively and habitually.
5. What are the essential points to be considered in the study of school hygiene.

Sec. 129. Trained nurse, Indian service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, seven hours. Entrance salary, \$600. As to applying for this examination, see p. 4.

Subjects.	Weights.
1. Anatomy and physiology.....	5
2. Hygiene of the sick room	20
3. General nursing	20
4. Surgical nursing	20
5. Obstetrical nursing	20
6. Experience as a nurse*	15
Total	100

* To be rated on Form 375.

No specimen questions or tests can be furnished at this time. The scope of the examination, however, is wholly within the limits of the customary course of training given to trained nurses throughout the country.

INTERNAL-REVENUE SERVICE.

Sec. 130. Internal-revenue examination.—Age limit, 21 years or over; application form, 101; time allowed, six hours. As to applying for this examination, see p. 4.

Eligibles will be certified for appointment only in the district in which they are examined. Attention is invited to the fact that in the Internal-Revenue Service from those certified the Department usually selects for appointment an eligible who is a resident of the district in which the vacancy exists.

All positions in the Internal-Revenue Service except the following are subject to competitive examination: Persons merely employed as laborers or workmen, persons whose appointments are subject to confirmation by the Senate, all deputy collectors, all storekeepers and gaugers whose compensation does not exceed \$3 per day when actually employed and whose aggregate compensation does not exceed \$500 per annum.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	5
2. Practical arithmetic	40
3. Letter writing (first grade, see sec. 35)	15
4. Penmanship	10
5. Copying from plain copy (first grade, see sec. 35).....	10
6. Elementary physics pertaining to gauging	20
Total	100

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The following questions and tests will indicate the general character of the second and sixth subjects:

SECOND SUBJECT.—*Arithmetic.*

Question 1. This question comprises a test in adding numbers across and finding the grand total. There are usually three columns of about twelve numbers each to be added. The arrangement of the columns is shown below, but only two numbers are placed in each column, being intended merely to explain the test:

3517	7169	4931	.....
6326	5145	676	.....
Grand total .....			.....

Question 2. Multiply 319.45 by .03165; from the product subtract 4.68047675, and divide the remainder by $\frac{2}{5}$.

Question 3. A brewer ordered the following beer stamps:

Denomination.	Number of stamps.	Face value of each stamp.	Face value of each denomination.
Hogshead	125	\$4.00	.....
Barrel	1,250	2.00	.....
½ barrel	1,560	1.00	.....
¼ barrel	1,920	.66	.....
⅛ barrel	1,590	.33	.....

What was the total face value of each denomination, and, allowing a discount of $7\frac{1}{2}$ per cent, what amount should be paid for the stamps?

Question 4. A druggist bought 1,440 bottles of a proprietary medicine for \$1,000.80. He paid the internal-revenue tax at the rate of $\frac{1}{2}$ of a cent for each 25 cents or fractional part thereof of the retail value per bottle. He sold the medicine for 90 cents per bottle. What was his per cent of gain on the total cost?

Question 5. What is the capacity (in wine gallons) of an open rectangular cistern made of material $1\frac{1}{4}$ inches in thickness, the exterior dimensions of which are as follows: $6\frac{1}{2}$ feet long, $4\frac{1}{2}$ feet wide, and $5\frac{1}{2}$ feet high? (231 cubic inches equal 1 wine gallon.)

SIXTH SUBJECT.—*Elementary physics pertaining to gauging.*

This exercise will consist of five questions or problems testing the applicant's knowledge of elementary physics pertaining to gauging. Such questions will be comparatively simple in character, and will involve an elementary knowledge of the use of the hydrometer, of the thermometer, and of the results of heat and cold on alcohol and other liquids.

Positions requiring a knowledge of stenography and typewriting will be filled from the departmental registers. See secs. 78 and 86.

LIFE-SAVING SERVICE.

Sec. 131. The entrance examination for this service is for the position of surfman. Persons desiring employment as surfman in the Life-Saving Service should write to or call upon the superintendent of the life-saving district or the keeper of the life-saving station at which they desire to be employed, for information and application blanks.

Age limits, 18 to 45 years; application form, 395. Applications for this examination may be filed at any time with the keeper of the life-saving station at which employment is sought.

An applicant must be a citizen of the United States, not less than 5 feet 6 inches in height, and must weigh not less than 135 nor more than 205 pounds. He must reside in the district in which he seeks employment, not more than 5 miles inland from the ocean, bay or sound shore or shore of the Great Lakes (except applicants for the Louisville station at the falls of the Ohio River), and must be able to read and write the English language.

No person shall be examined who has not had at least three years' experience as a surfman, sailor, or boatman; but if there are no eligibles in and for the section where the vacancy exists, and certification can not be made from any other section because there are insufficient eligibles to make a certification for the existing vacancy, applicants having had less than three years' experience or no experience at all may be examined.

Subjects.	Weights.
1. Physical condition.....	50
2. Experience.....	40
3. Age.....	10
Total	100

These subjects are all noneducational in their character, and are rated upon the statements and vouchers furnished by the applicant in his application.

LIGHT-HOUSE SERVICE.

Sec. 132. Master, mate, pilot, engineer, and assistant engineer.—Age limit, 20 years or over; application form, 1025. Applications, blanks, and other information may be obtained from the inspector of the light-house district in which employment is sought. Applications when complete should be filed with such inspector, and not with the Civil Service Commission at Washington.

Subjects.	Weights.
1. Age*	10
2. Character as a workman*	40
3. Experience*	40
4. Physical condition*	10
Total	100

* Rated on Form 1025.

Applicants may be called upon for additional evidence of their statements in the application.

Sec. 133. Keepers and assistant keepers of light-houses and officers of light-ships.—Age limit, 18 to 50 years; application form, 1026. Applications, blanks, and other information may be obtained from the inspector of the light-house district in which employment is sought. Applications when complete should be filed with such inspectors, and not with the Civil Service Commission at Washington.

Subjects.	Weights.
1. Age.....	10
2. Character as a workman.....	40
3. Experience	40
4. Physical condition	10
Total	100

No educational test will be given, but the subjects above enumerated will be rated on Form 1025.

In addition to the subjects above enumerated, such practical questions as may be deemed necessary for any particular locality may be given.

NOTE.—There are employed in the engineer's office in each light-house district persons who are engaged on construction work, such as masonry, plumbing, wood-working, etc. Applications for these positions should be filed with the inspector of the light-house district in which the position is sought.

MARINE-HOSPITAL SERVICE.

Sec. 134. The employees of the Marine-Hospital Service are distributed throughout the United States, but most of them are employed at the following named places:

United States marine hospitals.—Baltimore, Md.; Boston, Mass.; Cairo, Ill.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Delaware Breakwater, Del.; Detroit,

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Mich.; Evansville, Ind.; Key West, Fla.; Louisville, Ky.; Memphis, Tenn.; Mobile, Ala.; New Orleans, La.; New York, N. Y.; Philadelphia, Pa.; Portland, Me.; Port Townsend, Wash.; San Francisco, Cal.; St. Louis, Mo.; Vineyard Haven, Mass.; Wilmington, N. C.

Quarantine stations.—Brunswick, Ga.; Cape Charles (Fortress Monroe, Va.); Delaware Breakwater (Lewes, Del.); Gulf (Biloxi, Miss.); Port Townsend, Wash.; Reedy Island (via Port Penu, Del.); San Diego, Cal.; San Francisco (Angel Island, Cal.); South Atlantic (via Inverness, Ga.); Southport, N. C.; Tortugas (Key West, Fla.).

All employees at marine hospitals and quarantine stations must be of the male sex and preferably unmarried, as no quarters are furnished for families. At Southern quarantine stations preference will be given to applicants who are shown to be immune to yellow fever.

Medical certificates.—The medical certificate required in the application forms for positions in the Marine-Hospital Service must be filled out by a medical officer of the Marine-Hospital Service. Certificates from other physicians will not be accepted, except when the requirement above stated would work a hardship upon the applicant because of his distance from such medical officer. Such applicant will be permitted to furnish a certificate executed by any physician, provided that should he be selected for appointment he will be required to undergo a physical examination before an officer of the Marine-Hospital Service, and if found thereby to be physically disqualified he will be rejected for appointment.

Sec. 135. Excepted positions.—The following-mentioned positions or employees shall not be subject to any of the provisions of the civil-service rules, except sections 1, 2, and 3 of Rule II:

Interne.

Any local physician employed temporarily as acting assistant surgeon in the Marine-Hospital Service.

Any person employed in the Marine-Hospital Service as quarantine attendant at the Gulf, South Atlantic, Tortugas, Reedy Island, and Angel Island quarantines; and any person temporarily employed as quarantine attendant on quarantine vessels or in camps or stations established for quarantine purposes during epidemics of contagious diseases in the United States or beyond the seas.

Sec. 136. Acting assistant surgeon, Marine-Hospital Service.—Age limit, 20 years or over; application forms, 304 and 375; time allowed, two days of seven hours each. Entrance salary, \$300 to \$1,800 per annum. As to applying for this examination, see p. 4. Applicants for this position must be competent physicians and surgeons, graduates of reputable medical colleges, and must furnish satisfactory certificates relative to their moral character and ability. When a vacancy occurs, it is desirable to appoint to this position, whenever practicable, a regular practicing physician residing at the place where the vacancy exists.

Subjects.	Weights.
1. Letter writing	5
2. Anatomy and physiology	15
3. Surgery and surgical pathology	20
4. Chemistry, materia medica, and therapeutics	10
5. Bacteriology and hygiene	10
6. Theory and practice of medicine and general pathology	25
7. Obstetrics and gynecology	15
Total	100

The following questions and tests will indicate the general character of this examination:

LETTER WRITING.

The competitor is given the option of writing on either of two subjects. The following subject has been used:

Write in the space below a letter of not less than 150 words, giving your views as to the best means to be adopted for establishing effective quarantine against the spread of contagious diseases. This exercise is designed chiefly to test the competitor's skill in simple English composition. In marking the letter, its errors in form and address, in spelling, capitalization, punctuation, syntax, and style, and its adherence to the subject, will be considered.

ANATOMY AND PHYSIOLOGY.

1. Name ten muscles attached to the base of the skull. State of each the origin, insertion, innervation, and function.
2. Name the structures cut through in an amputation of the thigh at the apex of Scarpa's triangle.
3. Describe the seventh or facial nerve, giving its deep and apparent origin, general course, distribution, and function.
4. Describe the portal circulation.
5. State of the brachial artery, its branches, relations, and collateral circulation.
6. What are the factors in the production

of animal heat and the equalization of the body temperature? 7. What are the causes of the venous circulation? What are the influences of the peculiarities in the structure of veins upon, and what causes operate to impede, the venous circulation? 8. What is the effect of digestion upon the flow of bile? Describe the mechanism of the excretion of bile. 9. What is the composition of urea; from what is it formed in the body; what is the normal quantity excreted daily, and what causes, normal and pathological, increase or diminish this amount? 10. Describe briefly the glands (excluding the liver) which empty into the alimentary tract, and state the function of the secretion of each.

SURGERY AND SURGICAL PATHOLOGY.

1. What are the symptoms of ruptured urethra, and how is it treated? 2. What are the symptoms of shock? How should shock be treated? 3. Describe the operation of lateral lithotomy. 4. Describe briefly the different varieties of aneurism, and state the diagnostic features by which aneurism is recognized. 5. What are the early symptoms of hip-joint disease? What symptoms indicate the further extension of the disease? 6. What are the characteristics of chancroid? What complications arise in chancroid, and what treatment is necessary in each case? 7. Describe Syme's operation. 8. How may syphilis be transmitted from parent to child, and what are the characteristics of congenital syphilis? 9. How should a chronic ulcer on the lower third of the leg be treated? 10. Describe a method for the radical cure of hernia.

CHEMISTRY, MATERIA MEDICA, AND THERAPEUTICS.

1. What comprise the group of alkali metals? What are the characteristics by which these metals resemble each other? 2. Define each of the following: Compound radical, binary molecule, basic salt, derived ammonia, ortho-acid. 3. State the official names and formulae of the halogen compounds of mercury. Which is the most important, and how is it prepared? 4. Describe the Leblanc process for the manufacture of sodium carbonate, giving the formulae and reactions. 5. What is a chemical reaction? What are the conditions favoring reactions? Illustrate by example how a reaction is expressed. 6. What are the symptoms and treatment of acute arsenical poisoning? Describe Marsh's test for the detection of arsenic. 7. What is the physiological action of chloral hydrate? What are its effects in toxic doses, and how should poisoning by its use be treated? 8. Define the following terms: Carminative, astringent, demulcent, styptic, rubefacient, emollient, sialogogue, protective, chologogue, and escharotic. Name a drug as an example of each. 9. What are diaphoretics and how do they act? State the purposes for which they are used and how they are classified. 10. What are the physiological effects of atropine? What symptoms denote toxic effects of this alkaloid, and how should they be met?

BACTERIOLOGY AND HYGIENE.

1. How is it proved that a given organism is the cause of a particular disease? 2. Describe a method for the examination of sputum for tubercle bacilli. 3. Explain the principles upon which immunity is conferred by attacks of certain diseases caused by micro-organisms. 4. Where are the characteristic organisms found in diphtheria, and to what are the systemic manifestations due? 5. What is the pathogenic factor in typhoid fever? By what means is the infection disseminated, and what particular hygienic precaution is to be observed in typhoid cases? 6. How is the presence of nitrogenous organic matters detected in drinking water? What does such presence indicate? 7. Mention some of the methods used for the disinfection of a newly vacated sick room. 8. What are the causes which operate to produce the natural ventilation of a room? 9. What amount of air space should be allowed to each patient in a hospital ward? How much fresh air per hour should be admitted to a ward containing 75 patients? 10. Describe a method of artificial ventilation.

THEORY AND PRACTICE OF MEDICINE AND GENERAL PATHOLOGY.

1. What is meant by the malignancy of a tumor? Describe the histological features of one variety of malignant tumors. 2. What are the most common pathological conditions in mitral regurgitation? What is meant by broken compensation, and how is the prognosis affected by its occurrence? 3. What are the symptoms of rheumatic fever? With what diseases may the subacute form be mistaken? 4. How may the respiratory murmur be altered by disease? 5. In what disease is haematemesis a prominent symptom, and how should it be treated? 6. What are the objects of percussion in physical diagnosis, and how is it accomplished? 7. What are the diagnostic points of acute myelitis? What symptoms indicate the involvement of trophic centers, and how does the prognosis vary with the location of the lesion? 8. State the signs and symptoms by which appendicitis may be differentiated from intestinal obstruction and biliary colic. 9. Describe the various stages of remittent fever. What is the duration of the disease, and upon what facts is the diagnosis based? 10. Give the diagnosis, complications, course, and termination of a typical case of diabetes mellitus.

OBSTETRICS AND GYNECOLOGY.

1. What are the functions of the placenta? 2. State the "positions" of a breech presentation. Which of these are the most frequent? 3. How is the nutrition of the fetus sustained during the different periods of pregnancy? 4. Give the best method for inducing premature labor when it is designed to save the child's life. 5. Describe the mechanism of a left mento-anterior position. 6. What are the causes and symptoms of puerperal septicæmia? 7. What are the causes and symptoms of inversion of the uterus? 8. What symptoms may be anticipated from albuminuria in the early part of pregnancy? 9. What is peripheral venous thrombosis? To what is it due, and by what symptoms would it be recognized? 10. What is meant by "hourglass" contraction of the uterus? What is the usual cause and what is the necessary treatment?

Sec. 137. Hospital attendant, Marine-Hospital Service.—Age limit, 20 years or over; application form, 1093. The medical certificate on application Form 1093 must be filled out by a medical officer of the Marine-Hospital Service.

Vacancies in all minor positions in this service—such as quarantine attendant, nurse, master, deck hand, pilot, seaman, cook, cabin boy, ship keeper, boatman,

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engineer for quarantine duty, engineer in marine hospitals, etc.—will be filled from the hospital-attendant register. Applicants for any of these minor positions should, however, apply for the hospital-attendant examination, and should state just what qualifications they possess.

Applications, supplementary statements, and other information may be obtained from the medical officer at the hospital or station where employment is desired. Applications when complete should be filed with the same officer. No educational tests will be given in this examination, which will comprise the following subjects and weights:

Subjects.	Weights.
1. Age*	10
2. Character as a workman*	40
3. Experience*	40
4. Physical condition*	10
Total	100

* To be rated on Form 1003.

Sec. 138. Hospital-steward, Marine-Hospital Service.—Age limit, 21 to 30 years; application forms, 304 and 375; time allowed, two days of seven hours each. The medical certificate on Form 304 must be executed by a medical officer of the Marine-Hospital Service. This examination will be given on the date and at the places marked D in the schedule, sec. 9. Applicants must be graduates of pharmacy, which fact must be shown in the application. The Department does not desire to appoint persons to this position who are not willing to move from place to place, as stewards are subject to change of station at any time. Unmarried men or men with small families are preferred. The salaries of stewards range from \$600 to \$864 per annum in money, in addition to subsistence, quarters, fuel, lights, necessary laundry work, and medicines and surgical appliances in stock at the stations for themselves and families when sick. At a station where no quarters are furnished stewards are entitled to commutation of quarters at the rate of \$25 a month. They are also entitled to traveling expenses when traveling under orders. In the past the number of eligibles obtained has not been sufficient to meet the demands of the service.

Subjects.	Weights.
1. Spelling (second grade, see sec. 36).....	5
2. Arithmetic (second grade, see sec. 36).....	5
3. Penmanship	5
4. Letter writing (second grade, see sec. 36).....	5
5. Elements of bookkeeping and accounts.....	5
6. Chemistry	20
7. Pharmacy.....	40
8. Materia medica	15
Total	100

The following questions and tests will indicate the general character of the fifth, sixth, seventh, and eighth subjects.

KEEPING ACCOUNTS.

FIRST EXERCISE.

During the month of January, 1897, Frank Perkins had the following transactions with Smith, Kline & Co.: On January 1 Perkins owed Smith, Kline & Co. a balance of \$56.15. Perkins bought on account, on January 4, 2 ounces Spanish saffron, at \$13.50 per pound; January 6, one 25-pound keg niter, at 7½ cents per pound, less 8 per cent discount; January 7, 10 pounds Honduras sarsaparilla, at 38 cents per pound. On January 8 Perkins gave his note for \$50, due in thirty days, with interest at 6 per cent. Perkins bought on account, on January 9, 2 gallons North Carolina pine tar in half pints, at 65 cents per dozen half pints; January 12, 6 pounds citric acid, at 4½ cents per pound; January 20, 1½ gallons alcohol, at \$2.50 per gallon; January 21, 6 pounds powdered alum, at 7½ cents per pound; January 28, 3½ ounces quinine, at 36 cents per ounce. On January 29 Perkins paid, on account, cash \$12.57. January 30 Perkins bought, on account, 6 ounces cloves, at 80 cents per pound. Make a statement of the account as rendered to Perkins by Smith, Kline & Co. February 1, 1897.

SECOND EXERCISE.

- (1) Name the three principal books that are generally used in bookkeeping. (2) In personal accounts what is the significance of the terms debtor and creditor? (3) If the cash account does not balance, which side is always the larger? Why? (4) State in detail the method of closing an account. (5) If a personal account has a debit excess, what does this denote?

CHEMISTRY.

(1) Describe the metal mercury. State what are some of its important alloys, and give their composition. Give the formulae of the official salts of mercury. (2) State the tests to be relied upon for the detection of arsenic. Give a brief description of the methods of procedure in applying these tests. How would you prepare, by an official process, an antidote to arsenical poisoning? (3) Describe the metal aluminium. How is it prepared, and mention any improved processes lately applied? Give a brief description of the useful alloys into which this metal enters. (4) Give the chemical formulae of, and describe, magnesii sulphas and magnesii carbonas. State what are the points of difference between magnesia and magnesia ponderosa. Describe the preparation of magnesii citras effervescent. (5) What are the various natural sources of the sodium salts? Describe the ammonia soda process for the manufacture of sodium carbonate, stating the uses made of the by-products in the operation, and giving all formulae. (6) Contrast the qualitative tests of the ferrous and ferric salts. (7) Show by structural formulae the difference between the open and closed chain hydrocarbons. Name the class of compounds derived from each, mentioning, as an example, any one that may be official. (8) What is an alcohol; an ester; an ether? Name an official substance as an example of each, and give constitutional formulae. (9) What are the chemically distinctive features of alkaloids; of glucosides? Name two official drugs as examples of each. (10) What are the physical and chemical differences between essential oils and fixed oils; between camphors and resins?

PHARMACY.

(1) Give the unabridged official name and ingredients of collodium, fluid extract of licorice, purified ox gall, Donovan's solution, washed sulphur. (2) Give the English name and ingredients of sodium hydrocoronatum dilutum aqua chlori, ferrri carbonas saccharatus spirits ammonii, massa hydroargyri. (3) Give the official names of the mineral acids. Which of them are required to "contain 10 per cent of absolute" acid? (4) What is the official designation of the substance usually known as antifebrin? To what class of compounds does it belong? What are its physical properties; its best solvents; its reactions? (5) What are the pharmacopeial requirements for opium? Describe the official process for the assay of opium. (6) Name the ingredients and the quantities necessary to add to 236 gm. of powdered licorice root to make 1,000 gm. of compound licorice powder. Give the method of preparation and the official title. (7) What drugs enter into the composition of compound tincture of benzoin? Give the botanical name, natural order, habitat, and portion used of the plant from which each is derived? (8) Give the official name, chemical formula, uses, and dose of each of the following substances, and state the official preparation into which each of them enters: Silver nitrate, rochelle salt, mercuric iodide, subnitrate of bismuth, and tannin. (9) Give full pharmacopeial directions for the manufacture of suppositories. What differences are prescribed for rectal, urethral, and vaginal suppositories? (10a) Criticise the two following prescriptions:

	B	R	
Quin. Sulph.	gr. xxxii		Morphia Sulph. gr. iii
Tr. Ferri Chlor.			Potassa Brom. ii
Sp. Ammon. Aromat. as	iv		Aqua Cinnam. q. s. ad. iii
Aque Font.	q. s. ad. iii		
Sig.: A teaspoonful 3 times daily.			

MATERIA MEDICA.

(1) Jalap: Give the botanical name, natural order, and habitat of the plant. Describe the drug. What per cent of resin should it contain? State the behavior of this resin to simple solvents and to chemical solvents. How is it distinguished from the resins of false jalaps? Give the dose of jalap and of the resin. (2) Flaxseed: Name the plant and its natural order. Describe the drug, and explain its structural characteristics. Name its important medicinal constituents, and state the location of each in its tissues. (3) What is lupulin? Name the plant, and the part of the plant yielding it. Name its important constituents, and explain the change taking place on exposure. Give the medicinal properties of lupulin and its dose. (4) Name the plants belonging to the natural order Papaveraceae which yield official drugs. Give the part used, the most important constituent, the therapeutic uses of each constituent named, and the dose of each drng. (5) Give the botanical origin, natural order, part of plant used, active principle, medicinal properties, and dose of each of the following-named drugs: Capsicum, aspidium, coca, ergota, colchicum. (6) To what class of drugs does cantharis belong? What is its habitat? How is it collected? Describe the drug, naming its active principle. State the method for the valuation of cantharis and the amount of active principle which it should yield. What is its medicinal use and dose? (7) What is musk? Give the species, order, and habitat of the animal from which obtained. Describe the drug, and name the varieties to be met with. What are its constituents, its uses, and dose? (8) State the botanical origin, natural order, and habitat, and give a brief description of each of the following-named gum-resins: Ammoniac, myrrh, gamboge, assafetida, scammony. (9) From what part of the plant is ginger derived? What is the botanical origin and habitat of the plant? Give a brief description of the drug. What varieties are met with? To what is the hot taste of ginger due, and to what its aromatic odor? What are its medicinal uses? (10) What is the botanical origin of cane sugar? Describe its preparation. Give a brief description of physical and chemical properties, including its molecular composition. What is used to whiten imperfectly decolorized sugars, and how may this substance be detected?

MINT AND ASSAY SERVICE.

Sec. 139. At the following-named cities boards of examiners have been organized: Denver, Colo.; Helena, Mont.; New Orleans, La.; New York, N. Y.; Philadelphia, Pa.; San Francisco, Cal.; Seattle, Wash.

Persons desiring employment in any one of these offices should write for application blanks and information to the secretary of the local board where they desire employment. For information relative to appointment in offices where boards of

examiners have not been organized application should be made to the Civil Service Commission at Washington.

No application for appointment to or employment in any mint or assay office shall be accepted from any person who can not furnish satisfactory evidence as to his character and integrity, and before any such person is selected for appointment or employment, further inquiry shall be made as to his character and integrity by the board of examiners, the superintendent, and the operating officer of the department in which such person is to be employed.

Classified positions in the mint and assay service are arranged in the following schedules:

Sec. 133. Schedule A, classified positions.—Excepted from competitive examination.

Sec. 140. Schedule B, scientific positions.—Assistant superintendent of machinery, chief electrician, chief engineer, foreman in melting and refining department, refiner, assistant assayer, second assistant assayer, third assistant assayer, weighers in assayer's department, engraver, die maker, chemist, foreman of laboratory, foreman of deposit melting, assistant foreman in melting and refining department, superintendent of refinery.

Age limit, 20 years or over; application forms, 304 and 375.

These examinations will be given only when eligibles are needed, and will be announced through the public press. Applications for these examinations will not be accepted until such examinations are announced.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35)	5
2. Arithmetic (first grade, see sec. 35)	5
3. Letter writing (first grade, see sec. 35)	10
4. Penmanship	5
5. Practical questions or tests relating to the specific duties of the position to be filled	75
Total	100

Sec. 141. Apprentice, Mint and Assay Service.—Age limits, 18 to 24 years, inclusive; application forms, 304, 375, and special form. Applicants may file their applications for this position at any time. These applications and the material submitted with them will, however, be considered and rated at specific intervals to be determined by the Commission. The competitors will not be assembled for any of the tests, but should submit with their applications all the material required by the scope of the examination. Applications will not be accepted from other than graduates in metallurgy or mechanical engineering and chemistry from technical schools of recognized standing. Each applicant must file a properly certified statement as to the length of time spent in college, the studies pursued, the standing in those studies, and the special qualifications he has for such work, together with a thesis upon metallurgy, chemistry, or some other topic along the lines of technical work which he desires to pursue.

The length of time any apprentice may serve in this capacity in the Department is limited to three years. On the completion of his term of service as apprentice the employee shall be eligible for appointment to any position in the operating department in which his term of service as apprentice has been served.

Subjects.	Weights.
1. Graduation from technical school of recognized standing	50
2. Thesis upon metallurgy, chemistry, or some other appropriate topic	25
3. Physical examination	25
Total	100

Sec. 142. Schedule C, clerical positions.—Abstract clerk, assayer's computation clerk, assistant bookkeeper, assistant curator, assistant custodian, assistant inspector, assistant weigh clerk, bank messenger, bookkeeper, cashier's clerk, clerk, copyist, inspector, medal clerk, pay clerk, registrar clerk, registrar of accounts, registrar of deposits, shipping clerk, statistical clerk, storekeeper, time clerk, warrant clerk, weigh clerk.

Age limit, 20 years or over; application forms, 304 and 375.

Two registers will be established from these examinations, one containing the names of clerk eligibles and the other the names of eligibles who have had experience in the various positions mentioned or similar thereto. These examinations will be held only when eligibles are needed, and applications therefor will not be accepted until such examinations are announced.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	10
2. Arithmetic (first grade, see sec. 35).....	25
3. Letter writing (first grade, see sec. 35).....	25
4. Penmanship	10
5. Copying from plain copy (first grade, see sec. 35).....	15
6. Elements of accounts (see elementary bookkeeping and accounts, see sec. 104).....	15
Total	100

Sec. 143. Schedule D, mechanical trades or other skilled positions.—Adjuster, adjuster and reviewer, annealer, assistant engineer, assistant inspector, assistant weigher, assistant foreman of coining room, assistant foreman of melting and refining department, assistant foreman of rolling room, assistant forewoman of adjusters, assistant in acid room, blacksmith, bullion sampler, carpenter, captain of watch, chief door-keeper, classified laborer, classified workman, cleaner, conductor, counter, cutter, deposit melter, elevator conductor, employee in sweep cellar, engineer, fireman, foreman in acid room, foreman in assayer's department, foreman of carpenters, foreman of cleaners, foreman of coining room, foreman of deposit melting room, foreman of laborers, foreman of rolling room, forewoman of adjusters, gas fitter, gas-plant tender, gatekeeper, gold boiler, helper in assayer's department, helper in coiner's department, helper in melting and refining department, inspector, janitor, laboratory helper, machinist, melter and assistant melter of all kinds, messenger, millwright, minor-coin counter, oiler, painter, plumber, prover, roller, sewing woman, silver reducer, skilled workman in assayer's department, steam fitter, telephone operator, watchman.

Age limit, 20 years or over; application form, 1115. Applicants must file a separate form, 1115, for each of these positions for which they desire to qualify.

These examinations may be taken at any time before the local board of examiners at the mint or assay office in which the position is sought, or where there are no boards, when eligibles are needed and special examinations announced. The examination consists of two parts, part 1 comprising a scholastic test, and part 2 comprising a competitive registration or experience test, as follows:

PART 1.—SCHOLASTIC.

Subjects.	Weights.
1. Arithmetic (third grade, see sec. 37)	40
2. Letter writing (third grade, see sec. 37)	30
3. Penmanship	10
4. Copying from plain copy (third grade, see sec. 37).....	20
Total	100

PART 2.—COMPETITIVE REGISTRATION.

Subjects.	Weights.
1. Age.....	10
2. Character as a workman	40
3. Range of experience	40
4. Physical qualifications.....	10
Total	100

A competitor who fails to attain a mark of 70, in either the scholastic or registration test, shall not have his name entered upon the register of eligibles. In determining the general average of eligibles a weight of 30 per cent will be given.

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to part 1 and a weight of 70 per cent to part 2. For a description of the method of rating the elements of part 2, see sec. 84. However, graduates of reputable schools where technical instruction is given in the mechanical industries, may submit evidence of graduation in lieu of service as an apprentice, and will be given a mark of 75 for range of experience.

For each full year's experience of such graduate as journeyman in the various branches of his trade, to and including two years, he shall be given a mark of 10 in addition to 75; and for each full year's experience in the various branches of his trade over two and not exceeding four years, he shall be given a mark of 2 in addition to 95. For five or more year's experience in the various branches of his trade as a journeyman, a maximum mark of 100 shall be given.

NAVY-YARD SERVICE.

Sec. 144. Vacancies in the position of clerk, stenographer, typewriter, watchman and messenger, and draftsman will be filled by certification from existing registers for the Departmental or Government Printing Services when not filled by transfer or promotion. Persons who desire to become eligible to such positions should apply for the appropriate examination in the Departmental Service. No special examinations for such positions as those named will be held unless technical knowledge is required, and in such cases special examinations will be announced through the newspapers. Vacancies in positions embraced in Schedules A and B will be filled by certification from registers maintained at the several navy-yards, in accordance with regulations governing appointments to such positions. Persons desiring to become eligible to such positions should request application blanks and information from the secretary of the board of labor employment at the navy-yard at which they desire employment. Below will be found a list of positions covered by Schedules A and B:

SCHEDULE A.

Boy; boiler scaler; dredger; helper, general; helper, blacksmiths'; helper, boat-builders'; helper, joiners'; helper, machinists'; helper, molders'; helper, painters'; helper, plumbers'; helper, sawmill; helper, ship fitters'; helper, shipwrights'; helper, tinnery'; helper, boiler makers'; helper, brass-finishing'; helper, carpenters' (house); helper, coppersmiths'; helper, galvanizers'; helper, iron finishers'; hod carrier; holder on; janitor; laborer (common); rivet heater; stable keeper; teamster.

SCHEDULE B.

Anchor maker; blacksmith; block maker; boat builder; boiler maker; box maker; cabinetmaker; calker, wood; calker and chipper, iron; carpenter (house); cartridge maker; catcher; chain maker; coffee roaster; compass filter; cooper; copper refiner; coppersmith; core maker; diver; draftsman; driller; driver for fire engine; engine tender; engine tender, fire; engine tender, locomotive; engine tender, stationary; fastener; finisher, brass; finisher, iron; fireman; flagmaker; flange turner; forger, heavy; furnace man; galvanizer; gas filter; gas maker; hammer man; harness maker; hostler; horseshoer; instrument maker; joiner (house); joiner (ship); laboratorian; leather worker; letterer and grainer; machinist; machinist, electrical; mason, brick; mason, stone; mill man; model maker; molder, green-sand (iron or brass); molder, loam; oakum spinner; oakum maker; ordnance man; packer; painter; pattern maker; paver; pile driver; pipe filter; plasterer; plumber (house); plumber (ship); pressman; printer; puncher and shearer; reamer; rigger; riveter; roller, iron; rope maker; sailmaker; saw filer; sawyer; seamstress; ship fitter; shipwright; slater; spar maker; stonemason; tinner; tin roofer; tool maker; tool sharpener; turner; upholsterer; wharf builder; wheelwright; wireman.

The following-mentioned positions or employees shall not be subject to any of the provisions of the civil-service rules, except sections 1, 2, and 3 of civil-service Rule II:

All persons at navy-yards, naval stations, and at private shipbuilding and manufacturing establishments where work is done by contract for the Navy Department, employed as special mechanics and civilian assistant inspectors of work and materials (including ordnance, armor, armor plate, marine engines, hulls, buildings, dredging, etc.). Appointments to these positions shall be made hereafter on tests of fitness prescribed in paragraphs 74 to 83, inclusive, of Navy-yard Order No. 23, revised. See Sec. 51 relative to Executive order covering positions of ship draftsman, etc.

ORDNANCE DEPARTMENT SERVICE.

Sec. 145. Positions in the Ordnance Department at large are arranged in schedules as follows:

- Schedule A, technical places.
- Schedule B, clerical places.
- Schedule C, special mechanics.
- Schedule D, mechanics.
- Schedule E, foremen and inspectors.
- Schedule F, skilled laborers.
- Schedule G, messengers and watchmen.

However, appointment to the following-named positions will be made on registration tests of fitness prescribed in regulations to be issued by the Secretary of War and approved by the President of the United States: Foreman, assistant foreman, forage master, weigher, skilled laborer, guard, or piecework employees.

Persons desiring positions under schedules A and B should write for information to the United States Civil Service Commission at Washington, D. C. Those desiring employment under schedules C, D, E, F, and G should write for information to the secretary of the board of examiners at the ordnance establishment at which employment is sought.

Sec. 146. Schedule A, technical places.—This schedule includes the positions of chief engineer, draftsman, constructing engineer, engineer operating testing machine, civil engineer, resident engineer, chemist, chief inspector, resident inspector of shops, and assistant to inspector of ordnance. Age limit, 20 years or over; application forms, 304 and 375. These examinations will be given only when eligibles are needed, and will be announced through the public press. The examinations will consist of educational and technical tests appropriate to the positions to be filled. No specimen questions can be furnished.

Sec. 147. Schedule B, clerical places.—This schedule includes the positions of clerks, stenographers, clerk and telegraph operator, clerk and typewriter operators, typewriters, clerk and timekeepers, and copyists. Age limit, 20 years or over; application form, 304. Special examinations will be given in this schedule only when vacancies occur which can not be appropriately filled from existing departmental or other registers. For general character of a number of examinations in this schedule see corresponding titles under Departmental Service.

Sec. 148. Schedule C, special mechanics.—This schedule includes the positions of mechanical engineer, master mechanic, master workman, master machinist, master carriage maker, master carpenter, master painter, instrument maker, assistant to engineer at testing machine. Age limit, 20 years or over; application form, 1093. Applications may be filed at any time with the secretary of the board of examiners at the ordnance establishment at which employment is sought, and the names of eligibles will be entered upon the registers on the first day of the month following the date of filing the application.

For general character of the examinations under this schedule see fourth grade, or trades examinations, Departmental Service, sec. 84. No educational tests or practical questions are commonly required, but may be included at any time if the character of the position to be filled demands it.

Sec. 149. Schedule D, mechanics.—This schedule includes the positions of steam engineer and machinist, locomotive engineer, engineman, fireman, machinist, pattern maker, blacksmith, painter, tool maker, screw maker, file cutter, case hardener, temperer, engraver, diesinker, filer, vitrioler, polisher, rigger, piper, case maker, tinsmith, plumber, saddler, wheelwright, hammerman, boiler tender, steam engineer, engineer (not civil or mechanical), assistant steam engineer, electrician, mechanic, carpenter, smith, printer, mason, gauge maker, cutter, browner, bluer, harness maker, tool grinder, wheelman, steam and gas fitter, melter, millwright, molder, tinner, farrier, bolt maker, heater, rotary filer. Age limit, 20 years or over; application form, 1093. Applications may be filed at any time with the secretary of the board of examiners at the ordnance establishment at which the registers are prepared on the first day of the month following the date of filing the application.

For general character of the examinations under this schedule, see fourth grade or trades examinations, Departmental Service, sec. 84. No educational tests or practical questions are commonly required, but may be included at any time if the character of the position to be filled demands it.

Sec. 150. Schedule E, foremen and inspectors.—This schedule includes the positions of inspector, assistant in experimental firing, assistant inspector. Age limit, 20 years or over; application form, 1093. Applications may be filed at any time with the secretary of the board of examiners at the ordnance establishment at which employment is sought, and the names of eligibles will be entered upon the registers on the first day of the month following the date of filing the application.

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For general character of the examinations under this schedule, see fourth grade, or trades examinations, Departmental Service, sec. 84. No educational tests or practical questions are commonly required, but may be included at any time if the character of the position to be filled demands it.

Sec. 151. Schedule F, skilled laborers.—This schedule includes the positions of assistant machinist, assistant smith, assistant millwright, assistant piper, steam-hammer driver. Age limit, 20 years or over; application form, 1093. Applications may be filed at any time with the secretary of the board of examiners at the ordnance establishment at which employment is sought, and the names of eligibles will be entered upon the registers on the first day of the month following the date of filing the application.

For general character of the examinations under this schedule see fourth grade, or trades examinations, Departmental Service, sec. 84. No educational tests or practical questions are commonly required, but may be included at any time if the character of the position to be filled demands it.

Sec. 152. Schedule G, messengers and watchmen.—This schedule includes the positions of messenger, watchmen. Age limit, 20 years or over; application form, 1093. Applications may be filed at any time with the secretary of the board of examiners at the ordnance establishment at which employment is sought, and the names of eligibles will be entered upon the registers on the first day of the month following the date of filing the application.

For general character of the examinations under this schedule see fourth grade, or trades examinations, Departmental Service, sec. 84. No educational tests or practical questions are commonly required, but may be included at any time if the character of the position to be filled demands it.

POST-OFFICE SERVICE.

Sec. 153. Persons desiring employment in classified post-offices should write to the secretary of the board of examiners at the post-office in which they wish employment, and not to the Commission, for an application blank and information. All free-delivery post-offices are classified. There is but one examination for positions in classified post-offices, namely, the clerk-carrier examination, except at one or two of the large offices examination is given for porter when eligibles are needed. Applicants are required to indicate whether they wish employment as clerks or carriers. Regular examinations will be held in each classified first-class post-office once a year, on the first Wednesday or Saturday after the 15th of November, and applications for these examinations must be filed with the secretary of the local board of examiners not later than October 23. At all other classified post-offices examinations will be held only when eligibles are needed, and applications will not be accepted until such examinations are announced.

Positions requiring a knowledge of stenography and typewriting will be filled from the departmental registers (see secs. 78 and 86).

Age limit: For carriers, 21 to 40 years; for clerks and other positions, 18 years or over; application form, 101. Details incident to the preparation for an examination require that a date be set on which the receipt of applications for a particular examination shall cease. Applicants should therefore inquire of the secretary of the local board of examiners as to the date when the receipt of applications will close for any examination in which they desire to compete. Failure to file an application within the specified time will prevent an applicant from being examined.

Eligibles will be certified for appointment only in the district in which they are examined. Attention is invited to the fact that in the Post-Office Service from those certified the Department usually selects for appointment an eligible who is a resident of the district in which the vacancy exists.

Sec. 154. Clerk-carrier examination.—Time allowed, four and one-half hours.

Subjects.	Weights.
1. Spelling (second grade, see sec. 36)	10
2. Arithmetic (second grade, see sec. 36).....	10
3. Letter writing (second grade, see sec. 36).....	10
4. Penmanship	10
5. Copying from plain copy (second grade, see sec. 36)	10
6. Geography (second grade, see sec. 30)	25
7. Reading addresses (see sec. 155)	25
Total'.....	100

For description of the stenography and typewriting examination and method of filling vacancies therefrom, see secs. 78 and 86.

RAILWAY-MAIL SERVICE.

Sec. 155. Railway-mail clerk examination.—Age limit, 18 to 35 years; application form, 304; time allowed, five hours. This examination may be taken on the dates and at the places marked A, B, or E in the schedule, sec. 9. Entrance salary, \$800. The severe and exacting work required in this service demands great powers of physical endurance. A physical examination is therefore required. The Post-Office Department declines to appoint and the Commission will refuse to examine an applicant for this service who is under 125 pounds in weight, less than 5 feet 4 inches in height, or who is physically defective in any particular. Among the physical defects which debar from examination are the following: Loss or crippling of a hand, arm, leg, or foot; loss of an eye, or the use of glasses for any reason; rupture in any degree; varicose in any form; heart disease, or defective hearing, speech, or sight.

Any attempt to deceive in regard to height, weight, or age will be deemed sufficient cause for barring an applicant from future examinations. Eligibles selected for appointment may be subject to an additional physical examination at their expense before entering upon duty.

For method of certification, see sec. 174.

Subjects.	Weights.
1. Spelling (second grade, see sec. 36).....	5
2. Arithmetic (second grade, see sec. 36).....	10
3. Letter writing (second grade, see sec. 36)	10
4. Penmanship.....	5
5. Copying from plain copy (second grade, see sec. 36).....	10
6. Geography of the United States (second grade, see sec. 36).....	20
7. Systems of railway transportation	20
8. Reading addresses	20
Total	100

The following questions and tests, with the accompanying information, will indicate the general character of the seventh and eighth subjects:

SYSTEMS OF RAILWAY TRANSPORTATION IN THE UNITED STATES.

In this subject the questions are designed to elicit the competitor's knowledge of railway routes and systems of transportation in his railway-mail division and will be confined to the railroads entering and running through such railway-mail division, and connecting the principal cities, or important railway centers, within or near its borders; also junction points on the required railway routes, and the railroads connecting at such junction points. The term "junction point" is construed to mean the place (city, town, or station) where there are two or more railways (using separate tracks) entering, meeting, or crossing, or from which branch lines of a system diverge. In naming railroads, the competitor should give the names or titles by which the roads are known in the current official railway guides, and should not give old or local names:

1. Name the railroad or railroads which form the shortest route between — (here will be inserted the names of two important cities in the railway-mail division in which the competitor claims legal residence); name four junction points between the two cities on the required railway route, and name one connecting railroad at each required junction point. 2. Name the railroad or railroads which form the shortest route between — (here will be inserted the names of two important cities in the railway-mail division in which the competitor claims legal residence); and name four junction points on this route between the cities named above. 3. Name the railroad or railroads which form the shortest route between the following-named groups of cities — (Here will be inserted the names of eight important cities, arranged in groups of two each, in the railway-mail division in which the competitor claims legal residence.) 4. Name two railroads which enter each of the following-named cities — (Here will be inserted the names of four important cities in the railway-mail division in which the competitor claims legal residence.)

RAILWAY-MAIL DIVISIONS.

First division.—The New England States.

Second division.—New York, New Jersey, Pennsylvania, Delaware, the Eastern Shore of Maryland, and Accomac and Northampton counties, Virginia.

Third division.—Maryland (excluding the Eastern Shore), Virginia (excepting Accomac and Northampton counties), West Virginia, North Carolina, and the District of Columbia. Residents of the District of Columbia are required in connection with the seventh subject of their examination to indicate whether they desire their names entered on the register for Maryland or Virginia, as no register is kept for the District of Columbia.

Fourth division.—South Carolina, Georgia, Florida, Alabama, Mississippi, and Louisiana east of the Mississippi River.

Fifth division.—Ohio, Indiana, Kentucky, and Tennessee.

Sixth division.—Illinois, Iowa, Nebraska, and Wyoming.

Seventh division.—Missouri, Kansas, Colorado, and New Mexico.

Eighth division.—California, Nevada, Oregon, Alaska, Arizona, Idaho, Utah, and Washington.

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Ninth division.—Consists of the lower peninsula of Michigan; but competitors residing in this division will be examined on the States of Michigan, Ohio, Indiana, and Illinois. They will also be given questions on the distribution of the through mails via Buffalo, Suspension Bridge, Toledo, and Detroit; the lines of the Lake Shore and Michigan Southern Railroad.

Tenth division.—Wisconsin, northern peninsula of Michigan, Minnesota, North Dakota, South Dakota, and Montana.

Eleventh division.—Arkansas, Louisiana, Indian Territory, Texas, and Louisiana west of the Mississippi River.

Note.—When an applicant is a legal resident of a State which forms a portion of more than one railway mail division, he may be examined upon the systems of railway transportation of either of the divisions of which his State forms a part.

READING ADDRESSES.

The card-reading exercise consists in the reading of names and addresses on twenty-five postal cards. These addressees are all different and in different handwritings. The reading of these cards, accuracy and speed being counted, constitutes a very practical and important test of the competitor's ability in the exact line of the duties he will be called upon to perform if appointed. The exercise has a relative weight of one-fifth of the entire examination.

In this exercise each competitor is taken aside where the reading can not be overheard by other competitors. The examiner first places the competitor's examination number in the upper right-hand corner of a sheet on which the card addressees are printed in full. He then instructs the competitor in regard to the exercise, informing him that it is limited to five minutes; that speed and accuracy have equal weight in determining the mark on the sheet; that each address must be read in full without abbreviation, and that if an address or part of an address is incorrectly read, and read the second time, the second reading will be ignored, and the competitor will simply lose time by repeating. The time of beginning is correctly noted by the examiner in the table in the upper left-hand corner of the sheet, and the competitor is instructed to proceed with the reading and to turn each card face downward as he reads, so that the cards will be in order for the next competitor. Every error, abbreviation, or omission is clearly and distinctly noted on the sheet by the examiner with a colored pencil. No charge is made for incorrect pronunciation, if the name required is understood by the pronunciation given. During the reading the examiner will not interrupt the competitor, nor permit any interruption to take place, because speed is an essential part of the examination. The examiner computes the exact time (in minutes and seconds) consumed by the competitor in reading the cards, and notes the same in the table in the upper left-hand corner of the sheet. If the competitor fail to read the cards in five minutes, he is stopped, and the words "time up" are written opposite the number of the address upon which the time expired.

REVENUE-CUTTER SERVICE.

Sec. 156. Cadet, Revenue-Cutter Service.—Age limit, 18 to 25 years; application form, 304; time allowed, three days of seven hours each. The first five subjects will be given on the first day; the sixth, seventh, and eighth subjects on the second day, and the remaining subjects on the third day. This examination will be given only when eligibles are needed, and will be announced through the public press. Entrance salary, \$500 per annum and one ration per day.

(a) Under the regulations for the Treasury Department for the Revenue-Cutter Service, applicants are required to be of vigorous constitution, physically sound and well formed, not less than 5 feet 3 inches in height, of good moral character, and unmarried. The marriage of a cadet will be considered as equivalent to his resignation. Applicants are required to have the medical certificate on application form 304 executed by a regularly commissioned surgeon or assistant surgeon of the United States Marine-Hospital Service. If the applicant is shown to be physically or otherwise disqualified, his application for the educational examination will be rejected.

(b) The following is a list of the cities in which surgeons or assistant surgeons of the United States Marine-Hospital Service are located: Washington, D. C.; Mobile, Ala.; New York, N. Y.; Wilmington, N. C.; Detroit, Mich.; New Orleans, La.; Boston, Mass.; Cairo, Ill.; Baltimore, Md.; San Francisco, Cal.; Portland, Me.; Chicago, Ill.; Cincinnati, Ohio; Vineyard Haven, Mass.; Charleston, S. C.; Port Penn, Del.; Pittsburg, Pa.; Port Townsend, Wash.; Evansville, Ind.; Key West, Fla.; Louisville, Ky.; Fortress Monroe, Va.; Galveston, Tex.; Buffalo, N. Y.; Cleveland, Ohio; Philadelphia, Pa.; Savannah, Ga.; Portland, Oreg.; Biloxi, Miss.; Memphis, Tenn.; Southport, N. C.; Inverness, Ga.; St. Louis, Mo.; Lewes, Del.

While it is not a prerequisite to eligibility, all applicants for the position of cadet who have served at sea, or who have served as deck officers of seagoing vessels of the United States merchant marine, should file with their applications a certificate or certificates showing such service from the master of the merchant vessel with whom they have served or from a shipmasters' association. It is proposed to give an applicant credit for such service when satisfactorily shown.

Subjects.	Weights.
1. Spelling (first grade, see sec. 35).....	4
2. Geography of the United States.....	8
3. History and Constitution of the United States.....	12
4. Grammar, composition, and rhetoric.....	8
5. Arithmetic (first grade, see sec. 35).....	12
6. Algebra (including quadratics and binomial theorem).....	12
7. Geometry (plane and elements of solid).....	12
8. Trigonometry (plane).....	12
9. Physics	8
10. Chemistry (inorganic only).....	8
11. General information	4
Total	100

No specimen questions can be furnished.

STEAMBOAT-INSPECTION SERVICE.

Sec. 157. The positions for which examinations are given in this service are: Local inspector of hulls, assistant inspector of hulls, local inspector of boilers, assistant inspector of boilers.

Only residents of the local inspection district in which the vacancy occurs will be certified. In some districts, and in several of the cities of the other districts, no assistant inspectors are employed, the duties being performed by local inspectors. Vacancies in the position of assistant inspector will be filled from examination. Vacancies in the position of local inspector at places where only local inspectors are employed will be filled from examination, while vacancies in the position of local inspector at those places at which assistant inspectors are employed may be filled by the promotion of assistant inspectors who have served as such for at least one year, and who have had at their appointment as assistant inspector the three years' preliminary experience required under license, or who have had the five years' experience under license, as required for the position of local inspector, if in either case the assistant inspector is competent to fill the position of local inspector, or from examination. However, if an applicant has had, since the termination of the required term of service on board of steamers to the time of making application for examination, continuous service in kindred employments to those of officers of steam vessels, fitting him for the position of inspector, the fact that he has not served as an officer of steam vessels since the termination of such service will not disqualify him.

In making certifications for the Steamboat-Inspection Service, preference will be given to eligibles who are legal residents of the steamboat-inspection district in which the vacancy exists, and in the absence of such eligibles certification will be made of eligibles who have licenses for the waters of the district in which the vacancy exists, regardless of the local residence of the eligibles.

Applications will not be accepted from persons who are physically disqualified from performing the duties required of them, as shown in the physical examination prescribed in the blank form 1087 furnished by the commission.

Local and assistant inspectors of boilers must be physically able to enter a boiler through a manhole 9 by 15 inches, as required by sec. 21, Rule II, of the Board of Supervising Inspectors of Steam Vessels.

Assistant inspectors, as well as local inspectors, are employed at the following-named places: Baltimore, Md.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cleveland, Ohio; Milwaukee, Wis.; New Orleans, La.; New York, N. Y.; Philadelphia, Pa., and San Francisco, Cal.

Local inspectors only are employed at the following-named places: Albany, N. Y.; Apalachicola, Fla.; Bangor, Me.; Burlington, Vt.; Charleston, S. C.; Cincinnati, Ohio; Detroit, Mich.; Dubuque, Iowa; Duluth, Minn.; Evansville, Ind.; Gallipolis, Ohio; Galveston, Tex.; Grand Haven, Mich.; Jacksonville, Fla.; Louisville, Ky.; Marquette, Mich.; Memphis, Tenn.; Mobile, Ala.; Nashville, Tenn.; New Haven, Conn.; New London, Conn.; Norfolk, Va.; Oswego, N. Y.; Pittsburgh, Pa.; Port Huron, Mich.; Portland, Me.; Portland, Oreg.; Providence, R. I.; St. Louis, Mo.; Savannah, Ga.; Seattle, Wash.; Wheeling, W. Va., and Sitka, Alaska.

Special attention is called to the following section of the United States Revised Statutes:

SEC. 4416. No person interested, either directly or indirectly, in any patented article required to be used on any steamer by this title, or who is a member of any association of owners, masters, engineers, or pilots of steamboats, or who is directly or indirectly peculiarly interested in any steam vessel, or who has not the qualifications and requirements prescribed by this title, or who is intemperate in his habits, shall be eligible to hold the office of either supervising or local inspector, or to discharge the

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duties thereof; and if any such person shall attempt to exercise the functions of the office of either inspector he shall be deemed guilty of a misdemeanor, punishable by a fine of five hundred dollars, and shall be dismissed from office.

An applicant for the position of local inspector of hulls for seaboard ports must have had at least five years' actual practical experience as master or chief mate of seagoing steam vessels, a portion of which time must have been on seagoing steam vessels of 500 gross tons or over; for inland ports an applicant must have had at least five years' actual practical experience as master or first-class pilot of steam vessels of over 100 gross tons. In either case a portion of the required five years' experience must have been within the five years next preceding the date of application, which five years' experience must have been under United States license of the highest grade granted upon the waters on which the applicant has been so employed. The experience as master must have been on vessels required by law to carry a licensed master. The fact that he has been so licensed must be of record in the Treasury Department. An applicant must be free from the defect of color-blindness.

An applicant for the position of assistant inspector of hulls must have the same qualifications as for local inspector, except that the required term of service under license must be three years, a portion of which service must have been within the five years next preceding the date of application. At the port of New York some of the positions do not require a knowledge of sea navigation, and for these there are necessary only the requirements for inland port positions; at this port, therefore, the subject of sea navigation in the examination will be optional, but all applicants who can qualify for seaport positions are advised to take this subject, as their prospects of appointment are thereby increased.

An applicant for the position of local inspector of boilers must have had at least five years' actual practical experience as chief engineer of ocean or inland steamers of over 100 gross tons, as first assistant engineer of inland steamers of 600 gross tons or over, or as first assistant engineer of ocean steamers of 1,500 gross tons or over, a portion of which experience must have been within the five years next preceding the date of application. The experience required must have been under United States license, and the fact that he has been so licensed must be of record in the Treasury Department.

An applicant for the position of assistant inspector of boilers must have the same qualifications as for local inspector, except that the term of service required under license must be three years, a portion of which must have been within the five years next preceding the date of application.

For all positions of inspector of steam vessels *experience* will be rated as follows: For three years' service as required, 70 per cent; four years, 74 per cent; five years, 78 per cent; six years, 82 per cent; seven years, 86 per cent; eight years, 90 per cent; nine years, 92 per cent; ten years, 94 per cent; eleven years, 96 per cent; 12 years, 98 per cent; 13 years or over, 100 per cent; with the exception that experience only as chief mate or pilot will be given a rating of 70 per cent and no more. For each year's experience as United States inspector of steam vessels 6 per cent additional will be allowed, the percentage in no case to exceed 100.

Before an applicant's name will be placed on the eligible list for appointment to the position of local or assistant inspector of hulls he must receive at least 70 per cent on the examination in hull construction, at least 70 per cent in pilot rules and inland navigation, at least 60 per cent in lifeboats and life rafts, and a general average of at least 70 per cent.

Sec. 158. Local and assistant inspector of hulls, Steamboat-Inspection Service.—Age limit, 25 to 55 years; application form, 1087. This examination will be held only when eligibles are needed. Entrance salaries, \$1,200 to \$2,500 per annum.

Examination for *ports not requiring a knowledge of sea navigation*.

Time allowed, two days; seven hours the first day, and one and one-half hours the second day.

Subjects.	Weights.
1. Letter-writing (third grade, see sec. 37).....	10
2. Arithmetic..... <i>(This subject will comprise problems in common and decimal fractions, mensuration, and square root.)</i>	10
3. Hull construction	30
<i>(This subject will comprise questions relating to the construction and strength of wood and iron hulls of vessels, and a description of various parts and methods of joining the same.)</i>	
4. Pilot rules and inland navigation	20
<i>(This subject will comprise questions on the pilot rules of the board of supervising inspectors of steam vessels, and inland navigation.)</i>	
5. Lifeboats and liferafts..... <i>(This subject will comprise questions relating to the capacity of lifeboats and liferafts.)</i>	10
6. Experience.....	20
Total.....	100

Examination for ports where the subject of sea navigation is required.

Time allowed, two days; seven hours the first day, and four hours the second day.

Subjects.	Weights.
1. Letter-writing (third grade, see sec. 37)	10
2. Arithmetic (This subject will comprise problems in common and decimal fractions, mensuration, and square root.)	10
3. Hull construction (This subject will comprise questions relating to the construction and strength of wood and iron hulls of vessels, and a description of various parts and methods of joining the same.)	20
4. Pilot rules and inland navigation (This subject will comprise questions on the pilot rules of the board of supervising inspectors of steam vessels and inland navigation.)	20
5. Lifeboats and liferafts (This subject will comprise questions relating to the capacity of lifeboats and liferafts.)	10
6. Sea navigation (This subject will include practical questions relating to sea navigation.)	10
7. Experience	20
Total.....	100

NOTE.—The subject of sea navigation will be required at the following-named ports only:

San Francisco, Cal.	Boston, Mass.	Charleston, S. C.	Galveston, Tex.
Seattle, Wash.	Philadelphia, Pa.	Savannah, Ga.	Mobile, Ala.
Portland, Oreg.	Baltimore, Md.	Jacksonville, Fla.	Apalachicola, Fla.
New York, N. Y.	Norfolk, Va.	New Orleans, La.	

Each competitor should bring to the examination a copy of Bowditch's Navigator, or some other work on navigation, to be used only on the second sheet of this subject.

The following questions and tests will (with the exception of the subject of letter-writing) indicate the general character of these examinations:

ARITHMETIC.

1. Add the following (a short column of figures will here be given), and subtract 49,816,455,786 from the sum.
2. Multiply $37\frac{1}{2}$ by 400.3, and divide the product by 93.5. (Solve by decimals.)
3. If a cubic foot of coal weighs 63 pounds, find the number of tons of coal in a bin 3 feet 6 inches wide, 6 feet 9 inches deep, and 19 feet 6 inches long. [1 ton = 2,240 pounds.]
4. How many cubic feet of water can be held in a standpipe 10 feet 5 inches in diameter and 36 feet high? [The area of a circle is .785 times the square of its diameter.]
5. Extract the square root of 52,2729.

HULL CONSTRUCTION.

RIVER SERVICE.

For all inspection ports in the fourth, fifth, sixth, and seventh supervising inspection districts. The first seven questions apply to wooden hulls. Give answers in full.

1. Describe the keel, how fastened and joined to stem and stern post, and how the different lengths are connected.
2. Name the several parts of a transverse frame (rib) of a vessel, and describe how connected and joined.
3. Describe the main keelson and the fastenings driven through it. Describe sister keelsons and bilge keelsons, and state their use.
4. Describe a deck beam, how supported, and how connected to the hull.
5. Describe the framing of a hatch.
6. Locate and describe the stem, apron, deadwood (forward), and stemson.
7. Give the names and positions of the different strakes of inside and outside planking. The last three questions apply to iron or steel hulls.
8. Give a general description of the following-named parts of an iron hull, and state how connected to other parts of the hull: Keel (flat or bar), stem, main keelson, bilge stringer, deck beam, tie plates, transverse frame (rib), floor plate, reversed frame, and deck-beam pillars or stanchions.
9. Describe how two adjoining strakes of hull plating are united, and how fastened to the frames and stem. Describe how the ends of the plates are joined in the transverse joints.
10. Describe how wooden deck planking is fastened to iron deck beams.

PILOT RULES AND INLAND NAVIGATION.

NOTE.—Preparatory to answering the following questions, the competitor will name the water upon which his answers apply; whether, 1st, the inland waters of the Atlantic and Pacific coasts; 2d, the Great Lakes; or 3d, the Red River of the North, the Mississippi, or other rivers whose waters flow into the Gulf of Mexico.

1. Name the points of the compass in the quadrant from south to west.
2. Explain the use of the compass and chronometer in the navigation of rivers or other inland waters.
3. When two steamers are approaching each other from opposite directions, what whistle signal is given to pass to the right or on the port side of each other? How many blasts of the whistle are given to pass to the left?
4. If, when two steamers are running in the same direction, the pilot of the steamer astern shall desire to pass to the right or starboard side of the steamer ahead, what signals should be given?
5. If the course or intention of an approaching steamer is not understood by a pilot from signals being given or answered erroneously, or other cause, what signals should be given and what precautions taken?
6. What is meant by "cross signals," and should they ever be given?
7. What whistle signal should be given by a steamer when leaving her dock or berth?
8. Describe fully all lights required by law to be carried on steam vessels when underway and not towing, when navigating the waters named by candidate, at head of this sheet.
9. What fog signals are required of steam vessels underway and not towing?
10. What colored light is carried on the starboard side of a sail vessel

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underway? What on the port side? Through an arc of the horizon of how many points of the compass, from right ahead, should these lights show on their respective sides? What is the least distance they should be visible?

CAPACITY OF LIFEBOATS AND LIFERAFTS.

1. What number of persons would be allowed to a lifeboat of the following dimensions: Length, 24 feet; breadth, 5 feet 6 inches; and depth, 3 feet 4 inches, on a bay steamer? Determine in accordance with the following rule (section 2, Rule III, rules and regulations of the board of supervising inspectors): Multiply the outside length, outside width, and inside depth together, and (multiply) the product by .6; and divide the (last) product by 10 for ocean, lake, bay, or sound steamers; the quotient will be the number of persons such a boat is allowed to carry. 2. A life raft made of metal and wood is constructed of two cylinders, each with two conical ends, the outside dimensions being as follows: Length of each cylinder, 14 feet; diameter of each cylinder, 14 inches; altitude of each cone, 12 inches. Volume of all other parts of raft taken together is $\frac{1}{4}$ cubic feet. (Give work in full.) Total weight of raft in air, 450 pounds. Take buoyancy of 1 cubic foot of enclosed space as 62 pounds. What number of persons would be allowed to such raft on river steamers, allowing 156 pounds actual buoyancy for every person allowed? (Give work in full.)

Extract from Steamboat Inspectors' Manual:

Determination of capacity of life raft.—The net buoyancy of a life raft, when wholly immersed in water, equals the weight of displaced water less the weight of raft in air; so that the buoyancy can be obtained by estimating volume of all fixed parts and water-tight spaces, calculating the weight of equal volume of water, and deducting weight of raft in air.

(The volume of the cylinder equals the area of its base multiplied by its length. The volume of a cone equals the area of its base multiplied by one-third of its altitude. The area of a circle equals the square of its diameter multiplied by .7854.)

SEA NAVIGATION.

1. Name the points of the compass in the quadrant from south to west. 2. Explain the terms compass course, true course, variation, deviation, and leeway. 3. Describe the log line and how the speed of a vessel is determined by its use. Calculate the length of a knot for a 30-second glass, a nautical mile being equal to 6,080 feet. 4. What is apparent time, mean time, sidereal time, and equation of time? 5. Explain how a ship's position is determined by "cross bearings." Second, how is a ship's position determined by reference to a single fixed object visible from the ship. 6. Explain great-circle sailing and rhumb sailing, and the advantages of each.

Note.—Competitors will provide themselves with copies of Bowditch's Navigator, which may be used in the solution of the questions 7, 8, 9, and 10 only.

7. Calculate the course and distance from the island of Hawaii to San Francisco, Cal., on Mercator's principle. (Bowditch's Navigator, article 128.) San Francisco, latitude $37^{\circ} 47' N.$, longitude $122^{\circ} 27' W.$; Hawaii (Hilo), latitude $19^{\circ} 43' N.$, longitude $155^{\circ} 1' W.$ 8. A steamship under sail makes the following log in passing east of the Bermuda Islands from latitude $31^{\circ} 40' N.$, longitude $63^{\circ} 10' W.$ Correct the course for leeway, variation, and deviation in the following table, and determine the latitude and longitude in, and the course and distance made good from the point of which the latitude and longitude are given, by dead reckoning.

Knots.	Tenths.	Compass courses.	Wind.	Lee-way.	Variation.	Devia-tion.	Corrected courses.	N.	S.	E.	W.
10	5	N. $22^{\circ} W.$	SW.	30	$60^{\circ} W.$	$70^{\circ} E.$					
10	0	N. $12^{\circ} E.$	W.	60	$60^{\circ} W.$	$40^{\circ} E.$					
9	4	N.	W.	80	$60^{\circ} W.$	$50^{\circ} E.$					
8	0	N.	.....	.....	$60^{\circ} W.$	$50^{\circ} E.$					
8	0	N. $20^{\circ} W.$	.....	.....	$60^{\circ} W.$	$70^{\circ} E.$					
10	0	N. $37^{\circ} W.$	NE.	70	$60^{\circ} W.$	$10^{\circ} W.$					

9. On July 29, 1894, in longitude $37^{\circ} 30' W.$, the observed meridian altitude of the sun's lower limb, bearing south, was $88^{\circ} 20'$. Height of eye, 15 feet. Index correction, +2'. The corrected declination for the given longitude and time of observation is $18^{\circ} 41' 10'' N.$, and the semidiameter of the sun is $15' 48''$, as obtained from the Nautical Almanac. Determine the latitude. 10. At sea, November 28, 1886, p. m., in latitude $42^{\circ} 20' N.$, longitude by dead reckoning $31^{\circ} 15' W.$, the observed altitude of the sun's lower limb was $82^{\circ} 50'$. Height of eye above water, 19 feet. Index correction, +4'. Chronometer time of observation, November 28 d. 5 h. 20 m. Chronometer slow on Greenwich at time of observation 9 m. 58 s. From the Nautical Almanac, for time of observation, the declination is found to be $21^{\circ} 24' 45'' S.$; equation of time, -11 m. 45 s.; and semidiameter of the sun, $16' 15''.44$. Determine the longitude by observation.

Sec. 159. Local and assistant inspector of boilers.—Age limit, 25 to 55 years; application form, 1087; time allowed, two days of eight hours each. This examination will be held only when eligibles are needed. Entrance salaries, \$1,200 to \$2,500 per annum.

Subjects.	Weights.
1. Letter writing (third grade, see sec. 37)	10
2. Arithmetic. (This subject will consist of problems in common and decimal fractions, mensuration, and square root.)	10
3. Boilers and machinery. (This subject will comprise practical questions relating to boilers, engines, and machinery of steam vessels, and strength of boiler material.)	60
4. Experience.....	20
Total	100

The following questions and tests will indicate the general character of the second and third subjects:

ARITHMETIC.

1. Add the following (here will be given a short column of figures), and subtract 49,818,455.786 from the sum.
2. Multiply $37\frac{1}{2}$ by 400.3, and divide the product by 93.5. (Solve by decimals.)
3. If a cubic foot of coal weighs 63 lbs., find the number of tons of coal in a bin 5 ft. 6 in. wide, 6 ft. 9 in. deep, and 19 ft. 6 in. long. [1 ton = 2,240 lbs.]
4. How many cubic feet of water can be held in a standpipe 10 ft. 5 in. in diameter and 36 ft. high? [The area of a circle is .7854 times the square of its diameter.]
5. Extract the square root of 52,279.

PRELIMINARY QUESTIONS.

1. What is your trade or occupation?
2. How many years have you been engaged in such trade or occupation?
3. What qualifications or fitness do you possess, and what special educational training or experience have you had which fit you for the position for which you are being examined?

BOILERS AND MACHINERY (RIVER SERVICE).

1. Give a sketch of each of the following types of boiler: (a) Tubulous, (b) locomotive. Explain briefly the advantages and disadvantages of each type.
2. Describe in detail what is now considered the most approved method of testing a new steam boiler for strength, and in order that the same conditions may exist, as nearly as possible, as when the boiler is in actual use, and to avoid undue shock and strain on the boiler.
3. Describe how you would test an old boiler in place on board a vessel with the conveniences usually found on board.
4. What is meant by ultimate strength, proof strength, and working strength of material used in the manufacture of boilers?
5. Describe the most approved method now in use for bracing and staying tube sheets, flat surface in steam spaces, and water legs, giving by sketch the form of braces and stay bolts.
6. With the following data work out the distance apart from center to center of stay bolts: $S = \frac{2h^2C}{P}$, P = Pressure per square inch = 150, S = Distance between stays, C = Constant = say 54,000, h = Thickness of plate = $\frac{1}{16}$ ". Let factor of safety = 6 when $C = 9,000$.
7. Required the weight on the end of a safety-valve lever with the following data: W = Weight, L = Lever 42" long, G = Center of gravity of lever = 20", V = Weight of valve = 6 lbs., l = Distance between center of fulcrum and center of valve, w = Weight of lever = 10 lbs., P = Steam pressure = 100 lbs., A = Area of valve = 12.586.
8. What should determine the area of safety-valve opening?
9. What is the best type of safety valve for boilers using high steam pressure, and why is the lever valve objectionable?
10. What causes internal corrosion in a boiler, and what means can be taken to prevent it?
11. A sample piece of boiler plates, .63 inch thick, 1.01 inches wide, breaks at a strain of 39,100 pounds; what is the tensile strength of plate per square inch?
12. The same sample after breaking measures .79 inch wide and .38 inch thick at point of rupture; what is the reduced area per cent from the original measurements?
13. What are the advantages and what the disadvantages of multiple expansion engines?
14. What are the elements absolutely required in order to calculate the horsepower of an engine?
15. Sketch an indicator card from a condensing engine cutting at two-thirds the stroke of the main valve; indicate on the card the technical names of the various lines and the positions of the valve at various points of the stroke.
16. Describe the Stephenson link motion, and state its advantages and disadvantages.

BOILERS AND MACHINERY (SEA AND LAKE SERVICE).

1. Describe in detail the following types of boiler: (a) Tubulous or water-tube, (b) tubular or marine, (c) locomotive, (d) outside furnace land boiler.
2. What are the disadvantages of the ordinary tubular cylindrical boiler for steam pressure now in use, and the advantages of the water-tube boiler?
3. What precautions are now taken to guard against galvanic action or corrosion on the interior of marine boilers?
4. What are the precautions taken to prevent scale deposit on the interior of boilers using salt water?
5. In using lake or river water in boilers what deposits are mostly to be feared, and what precautions are taken to guard against them?
6. In using in a boiler well water, which is hard by reason of carbonate of lime or magnesia, how can it be made soft?
7. What form of safety valve is best adapted to high steam pressures?
8. Name the safety appliances usually attached to boiler.
9. What should be the capacity of a safety valve?
10. Should oil be used in boilers? If so, what kind, and for what purpose?
11. What advantages has a welded furnace seam over one that is riveted?
12. What is the strength of a single-riveted lap joint as compared to the solid plate?
13. Which is the stronger, chain riveting or zigzag riveting, and what is their proportional strength?
14. What is the advantage of butt-strap joints over a lap joint?
15. Describe the process of inspecting and testing a new boiler to see that the workmanship is good, stating the most approved modern practice of testing.
16. For a cylindrical return tubular boiler 12 feet diameter, working steam pressure 150 pounds, 2 furnaces, plain, 40 inches diameter, 6 feet long, material mild steel, tensile strength of material 60,000 pounds per square inch, work out the following: (a) Thickness of shell, (b) thickness of furnace, (c) size and spacing of stay bolts, (d) diameter of rivets.

(a) Thickness of shell:

$$t = \frac{D P}{2 \times K \times .80} + \frac{1}{16}$$

Where t = thickness of shell,

K = coefficient, allowing factor of safety of $\frac{4}{3}$,

$$K = \frac{60,000}{48} \times .80$$

Strength of joint = 80 per cent of plate.

Add $\frac{1}{16}$ for corrosion.

(b) Thickness of furnace:

$$\text{For plain furnaces with rings } t = \frac{P \times d}{9,000}$$

Where P = working pressure,

d = diameter in inches.

(c) Size and spacing of stay bolts:

Space stay bolts 8 inches apart from center to center, allowing 6,000 pounds per square-inch section—

$$\text{Area of stay} = \frac{S \times P}{6,000}$$

Where S = area to be stayed,

P = working pressure.

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(d) Diameter of rivets:

Use double butt strap, triple riveted. Double shear equals 1.75 single shear, which is, say, ~~is~~ tensile strength; rivet strength to equal 80 per cent of sheet. Space inner and outer row of rivets 8 inches apart, omitting alternate rivets in outer row, which gives five (5) rivets in each space, we have

$$a = \frac{t \times 8 \times .8 \times 28}{5 \times 1.75 \times 23} \quad \begin{matrix} a = \text{area of rivet,} \\ t = \text{thickness of sheet.} \end{matrix}$$

17. Give the thickness for corrugated furnace for above boiler, corrugation 6 inches pitch, two (2) furnaces forty (40) inches in diameter, seven feet six inches (7' 6") long.

$$\frac{12,500 \times T}{D} = \text{working pressure, where } T = \text{thickness in inches,} \quad D = \text{diameter in inches.}$$

18. Define the following in relation to the screw propeller: (a) Diameter of the screw; (b) disk area; (c) pitch; (d) apparent slip; (e) real slip; (f) fraction of the pitch; (g) angle of the screw.

19. What is meant by a uniform pitch, and an expanding pitch? 20. Explain briefly the advantages and disadvantages of multiple expansion engines and high-steam pressure. 21. Describe briefly the necessary machine work on a large steam-engine cylinder, to fit it for erection, after it is delivered from the foundry. 22. Describe briefly the operation of boring out shaft tubes and struts. 23. Describe briefly the molding of a cast-iron propeller, either by "sweeping up" or from a pattern in dry sand or loam (contestant to choose). 24. Describe a modern surface condenser as used on board ship, including method of packing tubes and provision for proper distribution of water. 25. Sketch a good practical indicator card for a condensing engine cutting off at two-thirds stroke with main valve; mark on the card the technical name for each line, and show by dotted lines the result of defect in adjustment of the valve.

SUBTREASURY SERVICE.

Sec. 160. Examinations for the different positions in the Subtreasury Service will be given only when eligibles are needed, but applications may be filed at any time with the secretary of the local board of examiners at the subtreasury in which employment is desired. From time to time, when examinations are required, those persons who have filed applications for the examinations under Schedules A, B, and C will be summoned to appear for examination, and the papers of those who have filed applications for the noneducational examinations under Schedule D will be rated. Positions in the Subtreasury Service are divided into Schedules A, B, C, and D, as follows:

Schedule A, fiduciary positions.—The officers, chiefs of divisions, tellers, assistant tellers, and other employees in the several monetary divisions, embracing those engaged in the handling of money, bonds, coupons, checks, and other representatives of money.

Schedule B, clerical positions.—Chiefs of divisions, bookkeepers, and other employees engaged upon merely clerical work.

Schedule C, miscellaneous positions.—Employees in nonclerical positions, including the superintendent of the building, detectives, messengers, hall men, and porters.

Schedule D, custodian positions.—Employees having the care and custody of the building, including engineers, watchmen, janitors, and classified laborers.

Rigid tests of character and integrity will be applied to all applicants by the local subtreasury civil-service boards, and only those satisfactorily meeting such tests may be examined. These tests shall be such as may be found practicable and satisfactory to the several assistant treasurers and the Civil Service Commission.

Sec. 161. *Schedule A.*—Age limit, 20 years or over; application forms, 304, 375, and testimonials of experience. The subjects of the examination are first-grade spelling, arithmetic, letter writing, penmanship, copying, and such other subjects pertaining to the duties of the position to be filled as the assistant treasurer may determine. Applicants for examination for positions under this schedule must have had at least three years' experience in similar duties. Experience will be given a weight of 30 per cent in the examinations.

Sec. 162. *Schedule B.*—Age limit, 20 years or over; application forms, 304, 375, and testimonials of experience. The subjects of the examination are first-grade spelling, arithmetic, letter writing, copying, and penmanship. Applicants for examination under this schedule must have had at least three years' experience in similar duties. Experience will be given a weight of 30 per cent in the examinations.

NOTE.—The subject of experience under Schedules A and B shall be graded as follows:

Less than three years' experience, excluded from examination.

For three years' experience, a credit of 70 per cent.

For four years' experience, a credit of 75 per cent.

For five years' experience, a credit of 80 per cent.

For six years' experience, a credit of 85 per cent.

For seven years' experience, a credit of 90 per cent.

For eight years' experience, a credit of 95 per cent.

For nine years' experience, a credit of 98 per cent.

For ten years' or more experience, a credit of 100 per cent.

Sec. 163. Schedule C.—Age limit, 20 years or over; application form, 304. The subjects of the examination are third-grade spelling, arithmetic, letter writing, penmanship, copying, and such practical questions pertaining to the duties of the position to be filled as the assistant treasurer may determine.

Sec. 164. Schedule D.—Age limit, 20 years or over; application form, 1093. No educational test will be given, but applicants will be graded on the subjects mentioned below, which will be weighted as follows:

Subjects.	Weights.
1. Physical ability, as determined by age and physical condition	20
2. Ability and character as a workman.....	40
3. Experience.....	40
Total	100

INFORMATION FOR COMPETITORS.

RULES GOVERNING COMPETITORS IN EXAMINATIONS.

Sec. 165. The following is a copy of the rules which are given to each competitor at the beginning of every examination:

1. Copy your examination number from the upper right-hand corner of the declaration sheet which will be given you. Write the number on your "preliminary sheet" for use on each sheet of the examination.

2. See that each sheet received by you pertains to the kind of examination which you are taking, and take care that you do not omit any of the sheets. Competitors are held responsible for errors and omissions.

3. Note in the proper blank spaces the place and date of the examination, the examination number, and the time of commencing and completing each examination sheet.

4. Unless otherwise stated you are not limited in time on any sheet, but gauge your work on each sheet so as to complete the examination within the limit of time prescribed for the entire examination. Time is reckoned from the moment of receiving the first examination sheet. No allowance will be made for time lost in or out of the examining room.

5. Do not leave the room, if possible to avoid it, with a sheet before you unfinished, for if you do the sheet will be taken up and will not be returned to you. A competitor in an examination of five hours or less is not allowed to leave the room until he has finished his examination, except in case of extreme necessity. No competitor shall leave the room at any time without permission of the examiner.

6. Read carefully the printed instructions on each sheet before commencing work thereon.

7. If necessary, the back of a sheet may be used to complete your work, unless directions to the contrary are printed on the sheet.

8. An examination sheet spoiled by you can not be exchanged for another of the same kind.

9. Perform all work on each examination sheet with ink.

10. Pencil and scratch paper may be used in preliminary work, except in the spelling exercise, which must be written with ink directly on the examination sheets from the dictation of the examiner.

11. Use no blank paper except that furnished by the examiner in charge, and on completing an examination sheet hand in the blank paper pertaining to that sheet. Have all your work complete on the examination sheet, however, as the blank paper is collected, not for consideration in the marking, but for destruction.

12. No helps of any kind are allowed. Before the examination is commenced, hand to the examiner any written or printed matter that you may have which might, if used, aid you in your work. Do not make a copy of any of the questions to be taken from the examination room.

13. All conversation or communication between competitors during the examination is strictly prohibited.

14. **CAUTION.—Every competitor is cautioned not to attempt to copy from the work of any other competitor nor to permit any competitor to copy from his work or look over the sheets in his possession. All work as soon as written should be carefully covered with a blotter or turned over as the sheets are completed. Evidences of copying or collusion in an examination may result in the cancellation of the examination papers, and in debarring those guilty from all future examinations.**

15. All necessary explanations will be made to the whole class. Examiners are forbidden to explain the meaning of any question or to make any remarks or suggestions that may assist in its solution.

16. From one to three months may elapse before you are notified of your standing. No unnecessary delay will occur in marking your papers, and you are requested not to increase the labors of the Commission by making inquiries in regard to your standing, unless you have reason to believe that the notice to you has miscarried.

17. To RAILWAY MAIL COMPETITORS ONLY.—In the Railway Mail Clerk examination sheet 7 contains the Eighth Subject—Reading Addresses. This sheet is not handled by the competitor. The exercise consists of the reading of twenty-five cards, on each of which is written a name and an address. As soon as convenient, during the day, each competitor will be taken aside for this exercise. If the reading is completed in 1½ minutes, the competitor receives 100 for speed, a proportionate deduction being made for time consumed in excess of 1½ minutes. If the reading consumes 5 minutes, the competitor receives only 60 for speed; and if the reading is not completed at the expiration of 5 minutes, the competitor will be stopped and a proportionate deduction be made from 60 for each card not read. Speed and accuracy have equal weight in determining the mark on the exercise. Each name and address on a card must be read in full without abbreviation; if an address or part of an address is incorrectly read and read the second time, the second reading will be ignored, and the competitor will simply lose time by repeating. *As soon as a card is read it must be turned face downwards, so that the cards will be in proper order for the next competitor.* Every error, abbreviation, or omission will be noted on the sheet by the examiner.

METHOD OF MARKING EXAMINATION PAPERS.

Sec. 166. The following method is observed in marking examination papers by the examining division of the Commission:

After an examination is held the papers are arranged by sheets or subjects and are forwarded under seal to the Commission. When they are reached in the order of marking, they are distributed by sheets to the examiners, Examiner A being given all of sheets 1, Examiner B all of sheets 2, Examiner C all of sheets 3, and so on, the sheets being distributed to as many examiners as there are subjects in the particular

examination to be marked. After the papers are marked in the first instance they are redistributed, and the first marking is reviewed by other examiners. When all of the papers of an examination have been marked and reviewed, those of each competitor are then for the first time assembled or brought together, his general average is ascertained, his declaration envelope is opened, and the declaration sheet to which he has signed his name is attached to his examination papers. The identity of the competitor, therefore, is not disclosed until his papers have been marked and reviewed and his general average determined. As the charges for specific errors are all fixed by the rules for marking, and as each subject is marked by one examiner and reviewed by another, it will be seen that absolute impartiality, accuracy, and uniformity are secured in the work.

Appeals from the markings are sometimes made by competitors, but the prospect of securing a higher average by such action is very remote. Errors on the part of examiners in making charges are seldom found, as the work of each examiner is verified and checked in every particular by another.

The papers of all the competitors in an examination must be marked at the same time, and no competitor's papers will be made special or be marked in advance of others.

Every competitor in an examination comprising both grade subjects and technical subjects must pass with an average of at least 70 per cent on the technical subjects in addition to attaining an eligible grade on the whole examination, in order to become eligible for appointment. Should a competitor fail to obtain an average of at least 70 per cent on the technical subjects, the basis or grade subjects will not be rated unless such basis or grade subjects be of the first grade and constitute a complete examination in themselves, in which case they may be rated independently of the technical subjects, if so requested by the competitor in his application.

RULES FOR MARKING EXAMINATION PAPERS.

As soon as practicable after an examination the papers of the competitors shall be marked and the general average of each ascertained.

All examination papers shall be marked under the following rules:

Mark every correct answer.....	100	The difference between the sum of the error marks of each answer and 100 will be the mark of the answer.
Mark every faulty answer according to its value on a scale of 100, as herein specifically directed, and deduct the sum of the error marks of each answer from 100.		

RULES FOR MARKING SPELLING.

From 100
deduct—

(1) For each error in spelling when the exercise consists of 20 words.....	5
(2) For each error in capitalization.....	1
(3) For each failure to use the hyphen when required in a compound word.....	2
(4) For each wrong use of the hyphen.....	2
(5) For dividing a word, properly written solid, into two or more parts, each part being a distinct word, or for writing a simple word as a compound word.....	2

RULES FOR MARKING WRITING FROM PLAIN COPY.

(1) For each error in orthography.....	5
(2) For each word or figure omitted, repeated, or improperly inserted: <i>Provided</i> , That a deduction of 10 shall be made for two or more consecutive words, if the words do not constitute more than one printed line of the copy; that a deduction of 15 shall be made for more than one line, but not to exceed one and one-half printed lines; that a deduction of 20 shall be made for two printed lines or more than one and one-half lines; and that a proportionate deduction shall be made for a greater number of printed lines: <i>Provided further</i> , That if the copying exercise shall consist of less than five printed lines the charge for the omission of one or more printed lines shall be double.....	5
(3) For each word inserted or added.....	5
(4) For each word or figure substituted.....	5
(5) For each transposition.....	5
(6) For each abbreviation not in the copy.....	5
(7) For each failure to capitalize according to copy.....	5
(8) For each failure to punctuate according to copy.....	5
(9) For each failure to paragraph according to copy.....	5
(10) For irregularity in left-hand margin.....	5
(11) For misdivision of a word at the end of a line.....	1
(12) For each omission or improper use of the hyphen in dividing a word at the end of a line.....	1
(13) For failure to indent as in copy (only one charge to be made in the exercise).....	5
(14) For each variation from the printed copy in the use of parentheses, brackets, or the hyphen.....	5
(15) For each word altered, interlined, or canceled, for each blot, and for each minor erasure, if not neat: <i>Provided</i> , That not more than 5 shall be charged for one interlineation or cancellation or for blots.....	1
(16) For failure to indicate, or for improperly indicating, italics, small caps, etc.....	5
(17) For pen rests, only one charge to be made in the exercise.....	5
(18) For using stenographic period (thus, X), only one charge to be made in the exercise.....	5
(19) For signing name.....	5
(20) For misplacement, want of neatness, etc	3 to 5

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RULES FOR MARKING COPYING FROM ROUGH DRAFT.

(1) For each error in orthography, <i>Provided</i> , That no charge shall be made for the repeated misspelling of the same word or stem in the same manner.....	3
(2) For each error in syntax, <i>Provided</i> , That no additional charge shall be made for changes necessarily resulting from a given method of correction or attempted correction.....	3
(3) For each change in tense, number, etc., which does not result in an error of syntax or essential change in the meaning.....	1
(4) For each word omitted, inserted, or substituted involving a test or essential change of meaning (not more than 10 to be charged for the first ten words of each omission, and one for each word thereafter, and not more than 10 for the omission of each indicated insertion).....	3
(5) For each word omitted, inserted, or substituted involving no test or essential change of meaning, and for each word repeated.....	1
(6) For each error in capitalization, punctuation, indentation, paragraphing, or in division of words.....	1
(7) For each error in transposition of inclosures.....	1
(8) For each error in transposition of words or groups of words, <i>Provided</i> , That for a transposition of two words which improves the sentence and involves no test no charge shall be made.....	5
(9) For each abbreviation.....	3
(10) For each failure to use hyphen when required, or for each wrong use of the hyphen.....	1 to 2
(11) For irregularity in left-hand margin.....	1
(12) For each word interlined or canceled (charge not to exceed 5 for any one interlineation or cancellation), for each blot, and each alteration if not neat.....	1 to 3
(13) For pen rests, according to gravity of error, only one charge to be made.....	5
(14) For stenographic periods (as ×), only one charge to be made.....	1
(15) For signing name.....	5

RULES FOR MARKING PENMANSHIP.

Mark penmanship according to its value on a scale of 100. In determining the mark on penmanship, legibility, rapidity, neatness, and general appearance, as well as correctness and uniformity in the formation of words, letters, and punctuation marks, will be considered, and it shall be proper for the examiners to be guided in a general way by the following scheme: Perfect, 100; very excellent, 93 to 90; excellent, 90 to 85; very good, 85 to 80; good, 80 to 75; ordinary, 75 to 70; poor, 70 to 65; very poor, 65 to 50. Below the grade of "very poor," 50 to 10.

RULES FOR MARKING LETTER WRITING.

In marking the letter, its errors in form and address, in spelling, capitalization, punctuation, syntax and style, and its adherence to and treatment of the subject given will be considered and its value in the judgment of the examiners marked on a scale of 100.

In determining the mark for letter writing it shall be proper for the examiner to be guided in a general way by the following scheme: Excellent, 100 to 90; good, 90 to 80; fair, 80 to 70; ordinary, 70 to 60; poor, 60 to 50; very poor, 50 to 25; practically worthless, 25 to 0.

RULES FOR MARKING ARITHMETIC.

	From 100 deduct—
(1) For wrong process, producing incorrect result in problems involving but one step or operation.....	100
(2) For the first wrong process in problems involving more than one step or operation, from 100 deduct 25 to 75, according to gravity of error; for each subsequent wrong process, according to gravity of error	10 to 75
(3) For error of one or more places in pointing off decimals.....	25
(4) For each evasion of a decimal or common fraction test in copying from printed question or from work.....	25
(5) For each error in computation: <i>Provided</i> , That in solutions where the possible maximum number of chargeable errors in computation is less than 10 a proportionate charge shall be made for each error.....	10
(6) For error in copying figures from printed question or from work, wrong result being obtained.....	10
(7) For error in copying figures from printed question or from work, right result being obtained	1 to 5
(8) For indicating wrong process, but performing correct process.....	5
(9) For incorrect or inconsistent punctuation.....	5 to 10
(10) For each improper use of the symbol or designation % or \$ in connection with a decimal expression.....	5 to 10
(11) For each improper or incorrect designation of a partial or final result.....	5
(12) For failure to indicate the answer in problems by the letters "Ans.," or otherwise, when the answer is obscured by improper arrangement	5
(13) For each failure to use the sign \$ or £, or any other monetary or commercial sign, or any sign by which the relations of quantities are expressed, when the use of such is required in the statement or solution of a problem.....	5
(14) For errors in denominating numbers in quantity of one denomination contained in a unit of a higher denomination, or for failure to express the answer in the several denominations, beginning with the highest, according to the gravity of the error.....	10 to 25
(15) For fractions in answer not reduced to lowest terms	5 to 10
(16) For an approximate result not sufficiently exact, or not followed by the proper plus sign or minus sign	5 to 10
(17) If, when work or operation in full is required, the correct answer is given, but no work is shown, according to quantity of work required in solution.....	25 to 75
(18) If, when work or operation in full is required, more than the mere answer is given, and the process is neither clearly indicated nor written in full, according to gravity of error	5 to 35
(19) For use of superfluous ciphers.....	5
(20) For superfluous or irrelevant work not canceled	10
(21) For giving proof instead of solution, according to gravity of error	10 to 75
(22) For complex statement, process, or method, right result being produced	10

RULES FOR MARKING GEOGRAPHY.

In marking this subject each answer shall be marked, in the judgment of the examiners, according to its value on a scale of 100.

When the question requires in the answer a specified number of States, countries, persons, places, locations, or things, the quotient arising from the division of 100 by the number of States, countries, etc., required shall be the credit to be given for each State, country, etc., correctly named. If a greater number is given in the answer than is required, the additional number of States, countries, etc., shall be added to the number required by the question, and the quotient arising from the division of 100 by the number thus obtained shall be the credit to be given for each State, country, etc., correctly named.

RULES FOR MARKING STENOGRAPHY EXAMINATION.

The practical part of this examination consists of two exercises in dictation, to be written by the competitor in stenographic characters, which he must then transcribe. One of the exercises is a selection from a speech and the other is a letter, each containing 260 words. The transcript will be compared with the printed text from which the dictation was given, and charges will be made for errors under the following rules:

	From 100 deduct—
(1) For each word omitted, added, or substituted.....	3
(2) For each word misspelled	3
(3) For the use of the plural instead of the singular, or the singular instead of the plural, when the grammatical correctness is not affected, 1 to 2; when the grammatical correctness is affected.....	3
(4) For each gross error in capitalization or punctuation	1
(5) For each transposition	2
(6) For each error in division of words	1
(7) For each word repeated	1
(8) For each failure to use hyphen when required	1
(9) For each abbreviation	1
(10) For failure to transcribe a line or a portion of a line of the stenographic notes, according to the number of words	6 to 40
(11) For interlineations, erasures, and lack of neatness	1 to 5

Charges for errors in numerals will be determined by the number of words required to write the numerals.

When the mark for accuracy is only 10, no credit will be given for speed.

An important element in this examination is speed in writing the stenographic notes, which will be marked upon the following scale: 70 per cent when the dictation is at the rate of 80 words per minute, 80 per cent for 100 words, 90 per cent for 120 words, and 100 per cent for 140 or more words per minute. (See sec. 85.)

RULES FOR MARKING TECHNICAL SUBJECTS OF TYPEWRITING EXAMINATION.

Speed and accuracy will be considered in marking all the subjects of this examination, each being marked on a scale of 100; in determining the average on each subject, speed will be given a weight of 2 and accuracy a weight of 3.

When the accuracy mark in an exercise is less than 10 per cent, no credit will be given for speed.

1. Tabulating exercise.

The tabulating exercise will be marked under the following rules:

	From 100 deduct—
(1) For omitting the general heading	10
(2) For improper general heading	5 to 10
(3) For each column heading omitted (total charges not to exceed 10)	5
(4) For each inaccuracy in column headings (total charges not to exceed 10)	1 to 3
(5) For each irregular margin to columns	3 to 10
(6) For each column omitted or substituted	25
(7) For each additional column inserted	10
(8) For each abbreviation contrary to instructions (total charges not to exceed 35)	5
(9) For each unnecessary run over to following line	5
(10) For each word or item omitted, added, or changed (for the omission of a whole line, 10), and for each transposition of items	5
(11) For each error in the name of an individual, State, or place, and for each error in other entries (only one charge to be made for the full name of an individual or for a single-column entry, or for the repeated misspelling of the same word)	5
(12) For each error in spelling in headings, and for other minor errors not specified	2 to 5
(13) For want of neatness by reason of blots, erasures, etc.	5 to 15
(14) For each comma used in place of a decimal point, or vice versa (total charge not to exceed 10)	2
(15) For each error in punctuation (total charge not to exceed 5)	1
(16) For omission of punctuation, thus evading test in spacing	5 to 20
(17) For omission of \$ or other signs required by copy	10
(18) For improper repetition of \$ or other signs required by copy	5
(19) For each error not specified above	5 to 10
(20) For drawing lines, with hyphen, period, or other character, between lines in table	10
(21) For preliminary test on machine	5 to 15

Time consumed will be marked according to the following scale: If the competitor consume only twenty minutes in tabulating, he will be credited with 100. When the time consumed is more than twenty minutes and not more than thirty minutes, one-half of 1 will be deducted from 100 for every minute consumed more than twenty minutes. When the time consumed is more than thirty minutes, 1 will be deducted from 95 for every minute consumed more than thirty minutes.

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2. *Transcribing rough draft.*

For rules for marking accuracy, see general rules for marking rough draft.
 Time consumed will be marked according to the following scale: If the competitor consume only ten minutes in transcribing rough draft, he will be credited with 100. When the time consumed is more than ten minutes and not more than twenty-five minutes, 2 will be deducted from 100 for every minute consumed more than ten minutes. When the time consumed is more than twenty-five minutes, 3 will be deducted from 70 for every minute consumed more than twenty-five minutes.

3. *Copying and spacing.*

In the copying and spacing exercise particular consideration will be given to the POSITION OF THE LINES AND THE SPACING BETWEEN LINES, the competitor being required to make as nearly as possible, a facsimile of the copy.

The copying and spacing exercise will be marked under the following rules:

	From 100 deduct—
(1) For each original error in spacing, according to gravity	5 to 15
(2) For each minor error in spacing between words and in commencing lines	2 to 3
(3) For lack of neatness	5 to 10
(4) For each line omitted	10
(5) For each error in orthography	5
(6) For each word or figure omitted, inserted, added, or substituted	5
(7) For each transposition	5
(8) For each failure to punctuate according to copy	5
(9) For each failure to paragraph according to copy	5
(10) For omission of hyphen in dividing a word at the end of a line	3
(11) For each variation from the printed copy not covered by the above rules	3 to 5
(12) For preliminary tests on machine	5 to 15

Time consumed will be marked under the rule for marking the tabulating exercise.

4. *Dictation exercise.*

The dictation exercise will be marked under the following rules:

	From 100 deduct—
(1) For each error in orthography	3
(2) For each word omitted, added, or substituted	3
(3) For the plural number instead of the singular, or the singular instead of the plural, when the grammatical correctness is not affected	1 to 2
(4) For each gross error in punctuation	1
(5) For each transposition	2
(6) For each abbreviation	2
(7) For each error in capitalization	2
(8) For each failure to use the hyphen when required	1
(9) For each wrong use of hyphen	1
(10) For each error in division of words	1
(11) For each irregularity in left-hand margin	3 to 5
(12) For want of neatness	5 to 20
(13) For each correction in letters, words, figures, or punctuation, with pen and ink or pencil	1 to 2
(14) For each error in paragraphing	3
(15) For each failure to space between words	2
(16) For striking one letter over another	1
(17) For each word repeated	2
(18) For each error in spacing between lines (total charges not to exceed 10)	3

Time consumed will be marked according to the following scale: For a speed of 65 words per minute a credit of 100 will be given, and for every word in speed less than 65 per minute 1 will be deducted from 100 down to and including 45 words per minute. For a speed of 45 words per minute a credit of 80 will be given, and for every word in speed less than 45, down to and including 35, a deduction of 1 $\frac{1}{2}$ from 80 will be made. For a speed of 35 words per minute a credit of 65 will be given, and for every word in speed less than 35 a deduction of 2 from 65 will be made.

RULES FOR MARKING BOOK TYPEWRITING EXAMINATION.

1. *Transcribing rough draft.*

Time consumed will be marked according to the following scale: If the competitor consume only twenty minutes in transcribing the rough draft he will be credited with 100. When the time consumed is more than twenty minutes and not more than thirty minutes 1 will be deducted from 100 for every minute consumed more than twenty minutes. When the time consumed is more than thirty minutes and not more than forty minutes 2 will be deducted from 90 for every minute consumed more than thirty minutes. When the time consumed is more than forty minutes 3 will be deducted from 70 for every minute consumed more than forty minutes.

(1) For striking keys too hard, thus marring back of sheet, charge 3 to 10 on each sheet so marred.
 (2) For each word rubbed or altered by erasure charge 1, not to exceed a total of 5 in the exercise: Provided, That for rubbing or alteration, very neatly done, the aggregate charges in the exercise may be made less than 1 for each error and less than a total of 5 in the exercise, in the discretion of the examiners.

2. *Tabulating.*

Time consumed will be marked according to the following scale: If the competitor consume only thirty-five minutes in tabulating he will be credited with 100. When the time consumed is more than thirty-five minutes and not more than forty-five minutes 1 will be deducted from 100 for every

minute consumed more than thirty-five minutes. When the time consumed is more than forty-five minutes 2 will be deducted from 90 for every minute consumed more than forty-five minutes.

(1) For striking keys too hard, thus marring back of sheet, charge 3 to 10 on each sheet so marred.
 (2) For each word rubbed or altered by erasure charge 1, not to exceed a total of 5 in the exercise: *Provided*, That for rubbing or alteration, very neatly done, the aggregate charges in the exercise may be made less than 1 for each error and less than a total of 5 in the exercise, in the discretion of the examiners.

(3) For each number either rubbed or changed by erasure or striking over charge 1, not to exceed a total of 10.

3. Copying and spacing.

Time consumed will be marked under the rule for marking the tabulating exercise.

(1) For striking keys too hard, thus marring back of sheet, charge 3 to 10 on each sheet so marred.
 (2) For each word rubbed or altered by erasure charge 1, not to exceed a total of 5 in the exercise: *Provided*, That for rubbing or alteration, very neatly done, the aggregate charges in the exercise may be made less than 1 for each error and less than a total of 5 in the exercise, in the discretion of the examiners.
 (3) For each number either rubbed or changed by erasure or striking over charge 1, not to exceed a total of 10.

RULES FOR MARKING THE READING OF ADDRESSES.

(*Railway-Mail and Post-Office services.*)

Two marks are given for this subject—one for accuracy, the other for speed. The sum of the marks for accuracy and speed, divided by 2, gives the average for the subject.

A charge of 2 will be made for each error, not exceeding two errors for each card, on the cards which are read within the five minutes allowed for the exercise, and a charge of 4 will be made for each address not read within the five minutes (if there be any such). Subtract the sum of these errors thus found from 100 and the result will be the mark for accuracy.

To ascertain the mark on speed the following table should be used. The first column indicates the number of minutes and seconds consumed in reading the addresses and the second column the mark for speed.

Time consumed.		Speed mark.													
Mins.	sec.	Per ct.													
1	20	100		2	35	89		3	30	78		4	25	67	
1	40	99		2	40	88		3	35	77		4	30	66	
1	50	98		2	45	87		3	40	76		4	35	65	
1	55	97		2	50	86		3	45	75		4	40	64	
2	0	96		2	55	85		3	50	74		4	45	63	
2	05	95		3	0	84		3	55	73		4	50	62	
2	10	94		3	05	83		4	0	72		4	55	61	
2	15	93		3	10	82		4	05	71		5	0	60	
2	20	92		3	15	81		4	10	70					
2	25	91		3	20	80		4	15	69					
2	30	90		3	25	79		4	20	68					

The above table shows the mark for minutes and fractions of minutes when the competitor reads all the addresses in five minutes or less. If all the addressees are not read within five minutes, the marks will be as follows for the number of cards read:

Cards read.	Speed mark.						
Per ct.		Per ct.		Per ct.		Per ct.	
24.....	58	18.....	43	12.....	29	6.....	14
23.....	55	17.....	41	11.....	26	5.....	12
22.....	53	16.....	38	10.....	24	4.....	10
21.....	50	15.....	36	9.....	22	3.....	7
20.....	48	14.....	34	8.....	19	2.....	5
19.....	46	13.....	31	7.....	17	1.....	2

If a competitor is allowed to consume more than five minutes in the reading of the cards, the number of cards considered as read within the prescribed limit will be such proportion of the number of cards actually read as five minutes are to the total number of minutes consumed, and the cards in excess of such number will be treated as if not read.

HASTE AND CARELESSNESS IN EXAMINATIONS.

Sec. 167. Many competitors either fail in an examination or fail to obtain a satisfactory grade, not through a lack of knowledge, but principally owing to *haste* and *carelessness* in reading and interpreting questions and in writing the answers. Especially is this true as to technical and professional examinations in which, with few exceptions, time is not an element in determining the rating. While a competitor must

finish his examination within the prescribed limit of time, he should carefully, thoughtfully, and fully answer each question, if possible.

The time allowed for each examination has been found to be sufficient for competitors to complete it by using a reasonable degree of intelligent application in their work, and it can not be extended in individual cases, as, for instance, where a competitor devotes so much time to the work of one subject that he can not complete the remaining subjects within the prescribed time. If an applicant finds that for any reason he can not devote to the examination the full time allowed for such examination, and would be unable to complete it within the time at his disposal, he should not attempt it, as no credit can be given for subjects or questions omitted, even though the work done in the other subjects would indicate that he could have passed the omitted subjects with credit if he had had the time. Correspondence from competitors with reference to such matters will therefore necessarily be fruitless.

NOTICE OF STANDING TO COMPETITORS.

Sec. 168. A notice of standing will be sent to each person examined, whether such person passes or fails to pass. This notice will be sent as soon as practicable after the papers are marked. Letters inquiring how soon the papers will be marked only serve to delay the work.

If the papers of a competitor who makes an eligible average are not complete in every particular the name of such competitor will not be entered upon the eligible register nor notice of standing sent until the papers are completed; and if not completed within two months after notice thereof is given the examination will be canceled.

In alleged cases of collusion the names of the persons suspected will not be entered upon the eligible register, should they make an eligible average, nor notices of standing be sent, unless, after thorough investigation, the charge of collusion is not sustained.

WHEN REEXAMINATIONS ARE ALLOWED.

Sec. 169. Persons who are examined, whether they pass or fail, are not eligible to reexamination for the same position, or any position covered by the same examination, until approximately one year after the date of the former examination. Unless the needs of the service require otherwise, special reexamination within less than a year will be granted only in cases in which injustice has been suffered by act of the Commission or one of its agents. Where an applicant has been unable to do himself justice on account of illness which occurred after the commencement of and during the progress of the examination, such applicant may be reexamined at the next regular examination upon filing a new application, provided he has submitted a sworn statement of the alleged facts which will justify the Commission in granting the reexamination. An applicant who is recovering from illness must abide by the result of his examination, whether or not he states in his declaration sheet that he is physically unable to do himself justice.

ELIGIBILITY AND APPOINTMENT.

Sec. 170. It is necessary to obtain a general average of 70 per cent to be eligible for appointment, except that applicants entitled to preference under section 1754, United States Revised Statutes, because of honorable discharge from the military or naval service for disability resulting from wounds or sickness incurred in the line of duty, need obtain but 65 per cent. (See sec. 176.) The relative standing of persons on any particular register may be changed by the addition of names of persons with higher standings. The grade obtained, and not the date of the examination, determines the position of a name upon the register. An eligible will upon proper request in person or by letter or by authorized representative be informed of his or her relative standing on the register, except on the assistant microscopist, observer, tagger, stock examiner, and meat inspector registers, which, at the request of the Agricultural Department, are closed registers.

Sec. 171. Every competitor in an examination comprising both grade subjects and technical subjects must pass with an average of at least 70 per cent on the technical subjects in addition to attaining an eligible grade on the whole examination, in order to become eligible for appointment. Should a competitor fail to obtain an average of at least 70 per cent on the technical subjects, the grade subjects will not be rated unless such grade subjects be of the first grade and constitute a complete examination in themselves, in which case they may be rated independently of the technical subjects, if so requested by the competitor in his application, and if an eligible average is attained his name may be entered upon the departmental clerk register.

WHEN PERIOD OF ELIGIBILITY BEGINS AND ENDS.

Sec. 172. The period of eligibility on all registers for original appointment to the service is one year from the date of entering the name on the register, which entry is made as soon as practicable after the completion of the marking of the papers. The date of entry of a name on the register is usually but a few days subsequent to the date of the notice of eligibility. The period of eligibility may, however, be extended in the discretion of the Commission for a further period of one year from the date of the expiration of the first year's eligibility upon such conditions as the Commission may prescribe. The extension of the period of eligibility can not be granted in individual cases, however, and is allowed only in the discretion of the Commission when the needs of the service require it, and then must be extended to the entire list of eligibles on the particular register to which applied. In case a person whose name is upon any register shall be mustered into the military or naval service of the United States at a time when the United States may be engaged in war the period of eligibility of such person shall, under such conditions as the Commission may prescribe, be considered as suspended during the time that such eligible may be serving in the Army or Navy of the United States.

METHODS OF CERTIFICATION.

Sec. 173. Until requested to certify names for filling a vacancy, the Commission has no information in regard to any vacancy which may exist in any branch of the service. Whenever a vacancy exists, the appointing officer makes requisition upon the Civil Service Commission for a certification of names to fill the vacancy, specifying the kind of position vacant, the sex desired, and the salary. Upon receipt of such requisition the Commission takes from the proper register of eligibles the names of the *three* persons standing highest of the sex called for, and certifies them to the appointing officer, who is required to select one of the three certified to fill the vacancy. The appointing officer may select any one of the three names. The two remaining names are returned to the register to await further certification. The time of examination is not considered in making certifications, as the highest in grade on the register must be certified first, although they may not have been the first examined. No eligible can be certified for appointment more than three times to the same department or office, but may be certified three times to each of the Executive Departments, if reached for such certifications during the year of eligibility. It will be seen that efforts to expedite certification or to secure certification out of the order required by law, rules, or the Commission's regulations can not possibly be of any avail. The Commission has absolutely no power to certify a name out of its order or to withhold a name from certification when reached. An eligible who declines an appointment tendered him will not again be certified unless he shall

request in writing within thirty days the benefit of the remaining certifications which the rules allow, stating reasons, which must be satisfactory to the Commission, for declining the appointment. Appointment from any register has the effect of removing the eligible from all registers unless the eligible requests otherwise in writing.

Sec. 174. (a) When requisition is made upon the Commission for certification of eligibles having qualifications not of such an unusual or highly technical character as to make it difficult to obtain a sufficient number of persons from the different States competent for the position, viz., bookkeeper, clerk, messenger, engineer, fireman, etc., certification is made of the three eligibles standing highest, of the sex called for, from the State at the time having the least share of appointments under the apportionment and therefore entitled to the certification. However, for stenographer and typewriter with a salary of \$840 or more per annum, certification is made of the highest three eligibles of the sex called for who are not residents of States that have received their full quota of appointments.

(b) When a requisition is made upon the Commission for a certification from the railway-mail register, certification is made of the three names highest in grade on the register from the State or Territory in which the vacancy exists.

(c) When requisition is made upon the Commission for certification of eligibles with qualifications of a technical character for positions in the apportioned service in the District of Columbia, but for which only the requisite number of eligibles are secured, certification is made of the three names standing highest on the register from the State or States not having received an excessive share of appointments under the apportionment. However, when the position is of an unusual or highly technical character and it is difficult to obtain persons competent for the position, the three persons standing highest in grade may be certified without regard to State residence. In this way some of the States have received an excessive share of appointments. (See sec. 177.)

(d) Certifications for positions outside of the District of Columbia are made in accordance with the following section of Rule VIII:

For filling vacancies in positions outside of the District of Columbia, and in positions in the pension agency, the depot quartermaster's office, and other local offices in the District of Columbia, the territory of the United States shall be arranged in such sections or districts as the Commission may determine; and an eligible shall be certified, in his order, to vacancies in the section or district in which he resides, and upon his written request to vacancies in any one or more of the other sections or districts: *Provided*, That in the custom-house service, post-office service, or internal-revenue service an eligible shall be certified only to vacancies in the custom district, post-office, or internal-revenue district where he was examined.

As a rule, for positions in the different parts of the departmental service outside of the District of Columbia preference may be given to eligibles who are residents of the section or district in which the vacancy exists.

For positions in the custom-house, the post-office, and the internal-revenue services eligibles will be certified for appointment only in the district in which they are examined. Attention is invited to the fact that in the three services last named, from those certified the department usually selects for appointment an eligible who is a resident of the district in which the vacancy exists.

(e) Eligibles for appointment in the departments at Washington may be certified to positions in the classified service outside of Washington requiring similar qualifications.

Sec. 175. If the papers of a competitor who makes an eligible average are not complete in every particular the name of such competitor will not be entered upon the eligible register nor notice of standing sent until the papers are completed; and if not completed within two months after notice thereof is given the examination will be canceled.

PREFERENCE FOR APPOINTMENT, SECTION 1754, R. S.

Sec. 176. It is a mistaken idea that *all* honorably discharged soldiers or sailors are entitled to preference in certification or appointment. Section 1754 of the Revised Statutes provides that persons honorably discharged from the military or naval service *by reason of disability resulting from wounds or sickness incurred in the line of duty* shall be preferred for appointments to the civil offices, provided they are found to possess the business capacity necessary for the proper discharge of the duties of such offices. A person coming under this provision of law has the following advantages: (a) He is released from all age limitations; (b) he has to attain a general average of only 65 per cent to be eligible, while for all others the required mark is 70 per cent; (c) having attained an average of 65 per cent, his name is placed upon the register above, and is certified before, all others who have not been allowed preference; and (d) he is released from all laws relating to apportionment of appointments. If on the same register the names of more than one preference claimant appear, the name of the claimant having the highest average will, of course, head the list. Preference under this section does not apply to persons who enter promotion examinations.

APPORTIONMENT OF APPOINTMENTS.

Sec. 177. The civil-service act requires that appointments to the public service in the departments at Washington shall be apportioned among the several States and Territories and the District of Columbia upon the basis of population as ascertained at the last preceding census, so far as the conditions of good administration will warrant. Civil Service Rule VIII excepts from such apportionment the following positions: Positions in the Government Printing Office that are not clerical or that do not belong to one of the recognized trades; printer's assistant, skilled helper, and operatives in the Bureau of Engraving and Printing; positions in the post quartermaster's office, in the pension agency, and other local offices in the District of Columbia, and to the positions of page and messenger boy, and of apprentice or student.

See section 180 for table showing the apportionment of appointments in the departmental service at Washington, D. C., from July 16, 1883, to December 31, 1900.

See section 181 for table showing the apportionment of appointments to clerical and recognized trades positions in the Government Printing Office on the basis of 2,000 appointments to and including December 31, 1900.

Sec. 178.—The following table shows the number examined, the number that passed, and the number appointed, during the fiscal years ended June 30, 1898, June 30, 1899, and June 30, 1900, for certain examinations.

[Each applicant should carefully examine the figures given in this table, as they will enable him to determine for himself the prospect of appointment from any of the registers.]

Service and position.	Fiscal year ended June 30 -	Male.			Female.			Salaries at which appointed.	
		Examined.	Passed.	Appointed.	Examined.	Passed.	Appointed.	Minimum.	Maximum.
DEPARTMENTAL SERVICE.									
Acting assistant surgeon.....	1898	82	16	1				\$720.00	\$720.00
	1899								
	1900	17	7						
Aid, Coast and Geodetic Survey.....	1898	14	8					720.00	720.00
	1899	23	13	4					
	1900	11	6	8					
Apprentice.....	1898	109	104	6					
	1899	80	74	11	2	2		a .50	a 1.00
	1900	27	25	12					
Assistant, Department of Agriculture.....	1898	43	16	3	4	2	1		
	1899	59	37	7	15	5	2	1,000.00	1,200.00
	1900	34	16	6	11	4	1		
Assistant examiner	1898	146	35	6					
	1899	82	20	35				1,200.00	1,200.00
	1900	106	31	13					
Assistant microscopist.....	1898	6	5		1,784	619	171		
	1899				500	171	17	600.00	600.00
	1900	1			144	50			
Assistant topographer	1898	22	9	7				900.00	1,200.00
	1899	24	12	2					
	1900	20	7	7					
Bookkeeper	1898	189	82	28	12	5			
	1899	403	184	31	22	12		720.00	1,000.00
	1900	192	94	45	12	4			
Cadet, Revenue-Cutter Service	1898	17	2	6					
	1899	84	6	4				500.00	500.00
	1900	123	39	17					
Civil and electrical engineer	1898	17	4						
	1900	7	4	4					
Clerk.....	1898	1,253	952	50	635	473	6		
	1899	2,244	1,782	96	955	756	15	600.00	600.00
	1900	1,566	1,217	100	570	442	8		
Computer, Office of Supervising Architect	1898	7	4		1	1			2,500.00
	1899	3	1	1					
	1900	14	6	2					
Draftsman, architectural	1898	5	2	1					
	1899	11	5	5					
	1900	17	6	5					
Draftsman, copyist, topographic.....	1898								
	1899	8	4	1	1				
	1900	10	4						
Draftsman, junior architectural	1898	24	7	2					1,400.00
	1899	16	5	8					
Draftsman, mechanical.....	1898	62	10	6					
	1899	24	5	13				1,200.00	1,500.00
	1900								

a Per diem.

Service and position.	Fiscal Year ended June 30—	Male.			Females.			Salaries at which appointed.	
		Examined.	Passed.	Appointed.	Examined.	Passed.	Appointed.	Minimum.	Maximum.
DEPARTMENTAL SERVICE—cont'd.									
Draftsman, senior architectural ..	1898	6	2	1					
	1899	5	2						
	1900								
Draftsman, topographic	1898	26	16	5					
	1899	24	6	3					
	1900	15		1					
Elevator conductor	1898	75	37	8					
	1899	23	19	26					
	1900	28	16	5					
Engineer (steam)	1898	38	24	7					
	1899	65	33	15					
	1900	214	208	38					
Fish culturist	1898	56	30	8					
	1899	27	14	4					
	1900	51	37	8					
Guard, United States penitentiary ..	1898								
	1899	137	44	11					
	1900	44	17	14					
Hospital steward, Marine-Hospital Service	1898	30	17	9					
	1899	20	9	6					
	1900	17	9	5					
Immigrant inspector	1898	17	9	1					
	1899	12	5	3					
Inspector and assistant inspector, Bureau of Animal Industry (meat inspector)	1898	120	44	55					
	1899	114	33	32					
	1900	99	44	53					
Inspector of boilers	1898	54	50	6					
	1899	10	6	4					
	1900	16	6	1					
Inspector of hulls	1898	62	47	5					
	1899	21	11	5					
	1900	7	5	5					
Junior civil engineer	1898	199	104	21					
	1899	181	57	38					
	1900	31	10	29					
Map printer	1898	1	1	1					
	1899	6	3	2					
	1900								
Messenger	1898	296	276	22	6	5			
	1899	433	410	32	18	16			
	1900	207	191	35	16	16			
Messenger boy	1898	85	82	19				(c)	(c)
	1899	263	243	58					
	1900	118	112	73					
Modern languages d	1898	44	29		31	11	2		
	1899	61	28	3	33	20			
	1900	27	11	2	12	1			
Observer, Weather Bureau	1898	99	71	26					
	1899	229	72	37	1				
	1900	314	141	14					
Printer's assistant e	1898				736	710	170		
	1899				186	182	293		
Proof reader	1898	6	3		2				
	1899	10	8	1					
Railway mail clerk f	1898	4,799	3,828	698					
	1899	5,220	4,319	726					
	1900	4,488	3,844	736					
Skilled laborer g	1898	202	182	22	1,314	1,263	140		
	1899	363	329	13	1,498	1,403	107		
Statistical field agent, Fish Commission	1898	3							
	1899								
	1900	13	5						

^a Per month.^b Per diem.^c The pay of messenger boy is from 50 cents per diem to \$360 per annum.^d Appointments were made of persons qualified as follows: French, 2.^e Appointments in 1898 were made from skilled laborer register.^f Appointments are made to class 1, which includes all places paying a salary of \$800 or less per annum. Places above \$800 are filled by promotion or transfer. There are a few places paying less salaries.^g In 1898 and 1899 appointments were made from this register for positions in the Bureau of Engraving and Printing and for the Government Printing Service. See separate registers for 1900.

Service and position.	Fiscal year ended June 30—	Male.			Female.			Salaries at which appointed.	
		Examined.	Passed.	Appointed.	Examined.	Passed.	Appointed.	Minimum.	Maximum.
DEPARTMENTAL SERVICE—Cont'd.									
Stenographer	1898	211	62	6	54	22	—	\$600.00	\$1,200.00
	1899	200	72	31	137	60	2		
	1900	241	75	22	110	31	2		
Stenographer and typewriter	1898	818	68	62	149	52	14		
	1899	481	85	74	260	49	12	600.00	1,200.00
	1900	429	135	87	212	80	9		
Stock examiner	1898	129	32	1	—	—	—	900.00	900.00
	1899	73	28	—	—	—	—		
Superintendent of construction	1898	57	20	1	—	—	—	1,200.00	a 6.00
	1899	46	13	10	—	—	—		
	1900	65	28	4	—	—	—		
Surfman	1898	566	526	175	—	—	—	a 65.00	a 65.00
	1899	483	372	247	—	—	—		
	1900	605	451	296	—	—	—		
Tagger	1898	372	284	36	—	—	—	720.00	720.00
	1899	456	391	57	—	—	—		
	1900	601	534	30	—	—	—		
Typewriter	1898	174	109	19	59	33	8	—	—
	1899	171	98	40	128	46	1	600.00	1,000.00
	1900	203	139	40	107	71	2		
Watchman	1898	447	302	45	—	—	—	480.00	720.00
	1899	316	277	35	—	—	—		
	1900	205	168	32	—	—	—		
INDIAN SERVICE.									
Industrial teacher and farmer	1898	73	33	20	—	—	—	300.00	900.00
	1899	57	21	14	—	—	—		
	1900	97	37	19	—	—	—		
Kindergarten teacher	1898	—	—	—	18	14	14	—	—
	1899	—	—	—	85	27	11	540.00	660.00
	1900	—	—	—	32	24	15		
Manual-training teacher	1898	2	2	2	—	—	—	600.00	600.00
	1899	4	4	—	—	—	—		
	1900	4	3	3	—	—	—		
Matron b	1898	—	—	—	127	91	11	—	—
	1899	—	—	—	68	55	18	450.00	720.00
	1900	—	—	—	115	93	15		
Physician	1898	35	15	5	1	1	—	720.00	1,200.00
	1899	22	10	7	2	2	—		
	1900	24	8	8	2	2	—		
Seamstress	1898	—	—	—	46	27	10	—	—
	1899	—	—	—	49	23	12	600.00	600.00
	1900	—	—	—	60	38	15		
Teacher	1898	57	30	23	100	50	21	—	—
	1899	61	35	26	90	39	26	500.00	1,200.00
	1900	110	52	33	100	39	25		
Trained nurse	1898	—	—	—	18	11	1	—	—
	1899	—	—	—	3	3	5	600.00	600.00
	1900	1	1	—	12	7	5		
GOVERNMENT PRINTING SERVICE.									
Bookbinder	1898	76	68	30	—	—	—	c 3.20	c 3.20
	1899	79	72	24	—	—	—		
	1900	138	119	17	—	—	—		
Compositor	1898	383	370	78	13	12	—	c 3.20	c 3.20
	1899	466	447	97	11	10	6		
	1900	534	502	149	13	12	4		
Electrotype finisher	1898	4	4	2	—	—	—	—	—
	1899	3	3	1	—	—	—		
	1900	7	6	3	—	—	—		
Electrotype molder	1898	3	2	2	—	—	—	—	—
	1899	4	3	3	—	—	—		
	1900	1	1	2	—	—	—		
Pressman	1898	46	44	5	—	—	—	—	—
	1899	54	52	14	—	—	—		
	1900	51	46	19	—	—	—		
Skilled helper	1898	—	—	—	—	—	—	—	—
	1900	260	227	6	748	714	—		
Skilled laborer (with experience)	1898	—	—	—	—	—	—	—	—
	1900	28	26	1	508	430	31		
Stereotyper	1898	4	3	—	—	—	—	—	—
	1899	1	1	—	—	—	—		
	1900	6	6	1	—	—	—		

a Per month.

b A few positions pay less than \$480 per annum.

c Per diem.

PROSPECT OF APPOINTMENT.

Sec. 179. Except as indicated in this paragraph, it is not possible to estimate the prospects of an eligible for appointment, and attempts to predict when names might be reached for certification would be certain to result in disappointment. The law requires examinations to be held, but the passing of an examination does not insure either certification or appointment. (See sec. 178.) The conditions of appointment in the various branches of the service are such that nothing can help and nothing can hinder the certification of a name in the order of its standing on a register. As the highest possible mark is 100 and the lowest that gives eligibility (except for preference eligibles, see sec. 176) is 70, it follows that the nearer a mark is to 100 the more likely it is that the person may be reached for certification within the period of eligibility. There are usually on the registers more eligibles having ordinary qualifications than are required for appointment. Under the civil-service rules the appointing officers are the final judges of the qualifications of the persons selected for appointment, and with the proper exercise of their discretion in selecting from among those certified the Commission can not interfere. No eligible can be certified for appointment more than three times to the same department or office from the same examination.

Entrance to the departmental service is usually in the lowest grades, the higher grades being filled generally by promotion. The prospect of promotion varies so much in the different departments that no special information on the subject can be given. The usual entrance grade is about \$900, but the applicant may be appointed at \$840, \$720, or even \$600.

There are very few special appropriations for the positions of stenographers, typewriters, bookkeepers, draftsmen, etc., and persons who pass those examinations are usually appointed with the designation of clerks or copyists. The supply of male eligibles in stenography and typewriting is barely equal to the demand, and male applicants proficient as stenographers and typewriters have much greater prospects of appointment than other applicants.

In the North Atlantic and North Central States the number of applicants, especially of women, for clerk places is excessive. The appointments from these States are chiefly made from the special registers.

During the last year no women were appointed from the clerk register in the departments at Washington. In typewriting, only those women who pass at a grade above 88 per cent have any prospect of appointment.

As the number of persons examined for the Railway-Mail Service is far in excess of the number appointed, only those who stand high on the registers have any prospect of being certified. Eligibles, except from the States and Territories of small population, who have grades below 88 have little prospect of appointment.

CLASSIFIED CIVIL SERVICE.

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Sec. 180. The following table shows the apportionment of appointments in the Departmental Service at Washington, D. C., from July 16, 1883, to January 1, 1901, under the census of 1900:

State or Territory.	Entitled.	Appointments.			Separations.	Net appointments charged.	Per cent received.
		Through examination.	Through reinstatement.	Through transfer.			
Alabama	183	126	11	7	25	119	64.974
Alaska	6	2	-----	-----	1	2	33.333
Arizona	10	6	1	1	1	7	70.000
Arkansas	131	84	3	3	11	79	60.277
California	148	107	6	10	17	106	71.656
Colorado	54	32	6	7	7	38	70.376
Connecticut	91	72	9	8	9	80	87.920
Delaware	18	15	-----	1	-----	16	88.880
District of Columbia	28	217	69	73	41	318	1,135.578
Florida	53	30	2	6	6	32	60.384
Georgia	222	162	17	12	42	149	66.600
Idaho	16	7	-----	1	1	7	43.750
Illinois	482	325	20	22	32	335	89.345
Indiana	252	196	14	8	13	205	81.385
Indian Territory	34	3	1	1	1	4	11.764
Iowa	223	160	12	10	16	166	74.368
Kansas	147	111	12	9	11	121	82.280
Kentucky	215	157	9	10	24	152	70.630
Louisiana	138	87	1	5	11	82	59.450
Maine	69	63	3	7	12	61	88.889
Maryland	119	143	30	29	24	178	149.520
Massachusetts	281	212	8	14	20	214	76.184
Michigan	242	187	7	7	26	175	72.275
Minnesota	175	96	7	8	8	103	58.813
Mississippi	155	109	3	7	14	105	67.725
Missouri	311	217	12	11	23	217	68.657
Montana	23	10	1	-----	2	9	38.132
Nebraska	107	78	3	7	11	77	71.985
Nevada	4	4	-----	-----	4	100.000	
New Hampshire	41	34	2	4	4	36	87.804
New Jersey	188	125	11	6	17	125	66.500
New Mexico	19	11	-----	2	1	12	63.156
New York	726	529	58	61	80	568	78.384
North Carolina	189	131	6	7	12	132	68.528
North Dakota	31	7	2	1	1	9	29.034
Ohio	416	342	36	25	27	376	90.240
Oklahoma	39	7	1	4	2	10	25.640
Oregon	41	26	1	4	5	26	63.414
Pennsylvania	630	448	41	46	61	474	78.366
Rhode Island	43	30	1	-----	1	30	69.780
South Carolina	134	99	4	5	15	93	69.378
South Dakota	39	20	-----	6	5	21	53.844
Tennessee	202	146	13	9	24	144	71.280
Texas	305	179	12	7	33	165	54.120
Utah	28	19	2	-----	4	17	80.707
Vermont	34	37	4	1	3	39	114.690
Virginia	185	162	23	32	29	188	101.708
Washington	52	25	2	3	8	22	42.306
West Virginia	96	62	5	8	7	68	70.856
Wisconsin	207	183	15	4	18	134	64.722
Wyoming	9	7	-----	3	1	9	100.000
Total	7,591	5,597	506	522	766	5,859	-----

CLASSIFIED CIVIL SERVICE.

Sec. 181. The following table shows the apportionment of appointments to clerical and recognized trades positions in the Government Printing Office on the basis of 2,521 appointments under the census of 1900 on January 1, 1901.

State or Territory	Entitled.	Appointments.			Separations since June 15, 1898.	Net appointments charged.	Per cent received.			
		Since June 15, 1898.								
		In the service on June 15, 1898.	Through reexamination.	Total.						
Alabama.....	61	5	11	4	15	6	14 22. 946			
Alaska	2	.....	.....	.....	.....	.....	.....
Arizona.....	3	.....	1	.....	1	.....	33. 333
Arkansas.....	44	16	10	5	15	10	21 47. 733			
California.....	39	6	18	5	21	7	20 51. 280			
Colorado.....	18	9	3	1	4	3	16 55. 555			
Connecticut.....	30	12	5	5	10	6	16 53. 328			
Delaware.....	6	10	.....	.....	.....	1	9 150. 000
District of Columbia.....	9	260	5	42	47	41	286 2, 955. 426			
Florida.....	18	2	5	3	8	2	8 44. 440			
Georgia.....	74	32	8	19	27	24	35 47. 285			
Idaho.....	5	1	.....	.....	.....	.....	1 20. 000
Illinois.....	161	72	33	27	60	31	101 62. 721			
Indiana.....	84	49	3	19	22	12	59 70. 210			
Indian Territory.....	11	.....	1	.....	1	.....	1 9. 090
Iowa.....	74	27	22	5	27	13	41 56. 391			
Kansas.....	49	27	7	6	13	7	33 67. 358			
Kentucky.....	72	32	11	22	33	26	39 54. 171			
Louisiana.....	46	11	8	3	11	12	10 21. 740			
Maine.....	23	3	7	.....	7	3	7 30. 432		
Maryland.....	40	94	6	42	48	33	109 272. 500			
Massachusetts.....	94	29	37	4	41	13	57 60. 648			
Michigan.....	81	35	14	13	27	12	50 61. 750			
Minnesota.....	58	24	9	5	14	7	31 53. 444			
Mississippi.....	52	15	4	7	11	8	18 34. 614			
Missouri.....	104	24	33	12	45	20	49 47. 138			
Montana.....	8	2	1	2	3	1	4 50. 000			
Nebraska.....	36	15	14	2	16	8	23 67. 643			
Nevada.....	1	.....	1	.....	1	.....	1 100. 000
New Hampshire.....	14	10	4	.....	4	2	12 85. 716		
New Jersey.....	63	50	3	15	18	11	57 90. 459			
New Mexico.....	6	1	1	.....	1	.....	2 83. 332	
New York.....	242	303	9	90	99	116	286 118. 118			
North Carolina.....	63	17	4	4	8	8	17 26. 979			
North Dakota.....	10	7	.....	.....	.....	1	6 60. 000
Ohio.....	139	74	21	40	61	20	106 76. 214			
Oklahoma.....	13	1	1	.....	1	.....	2 15. 384	
Oregon.....	14	1	3	.....	3	1	3 21. 429		
Pennsylvania.....	210	161	18	49	67	49	179 85. 204			
Rhode Island.....	14	3	7	.....	7	3	7 50. 001		
South Carolina.....	45	10	9	9	18	14	14 31. 108			
South Dakota.....	13	7	.....	1	1	.....	8 61. 536	
Tennessee.....	67	28	11	16	27	19	36 53. 748			
Texas.....	102	11	28	4	32	16	27 26. 460			
Utah.....	9	2	2	1	3	.....	5 55. 555		
Vermont.....	11	6	1	1	2	.....	8 72. 720		
Virginia.....	62	50	4	14	18	17	51 82. 263			
Washington.....	17	2	4	1	5	2	5 29. 410			
West Virginia.....	32	26	15	15	12	29 90. 625			
Wisconsin.....	69	9	20	3	23	5	27 89. 123			
Wyoming.....	3	1	1	1 83. 323			
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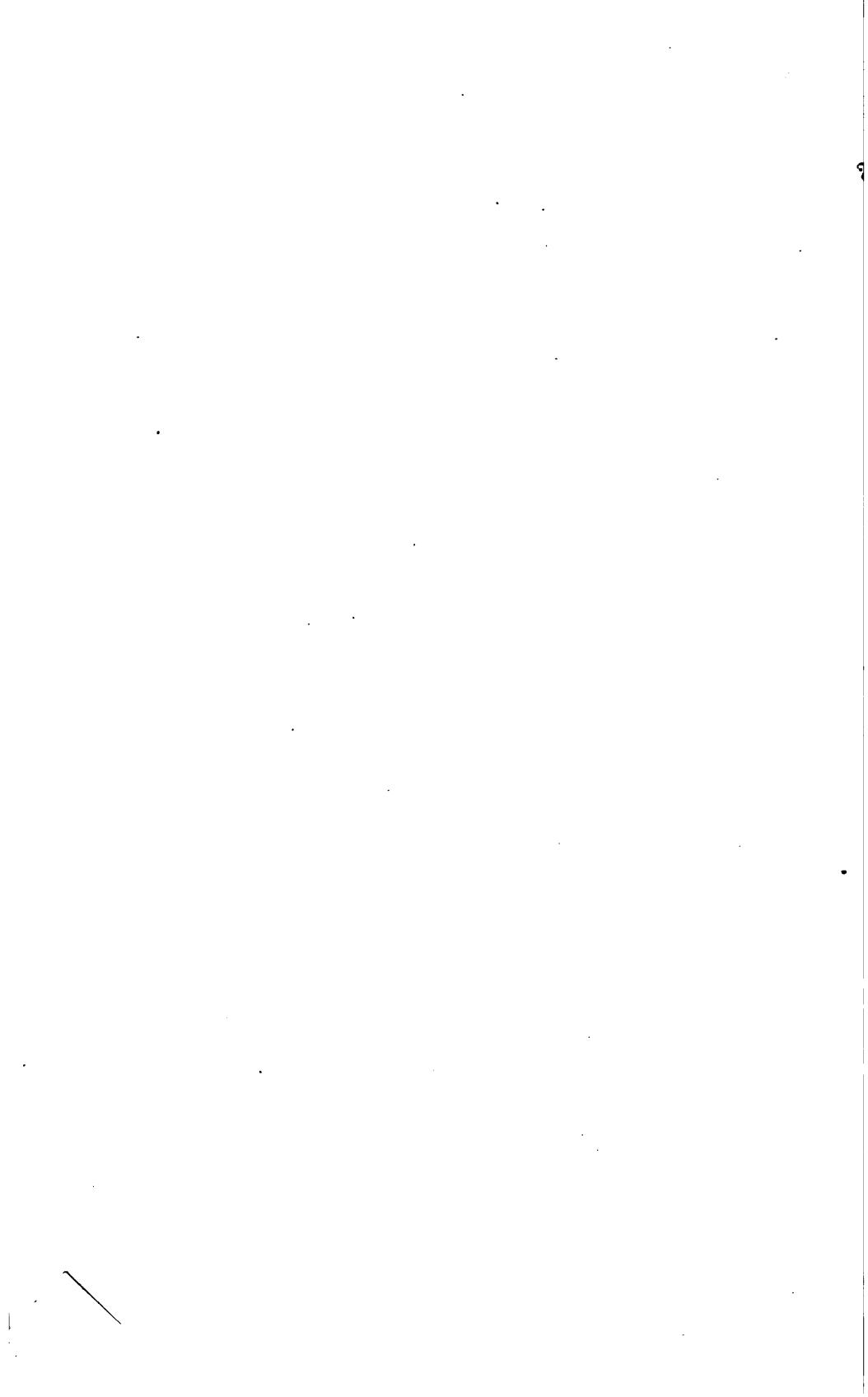
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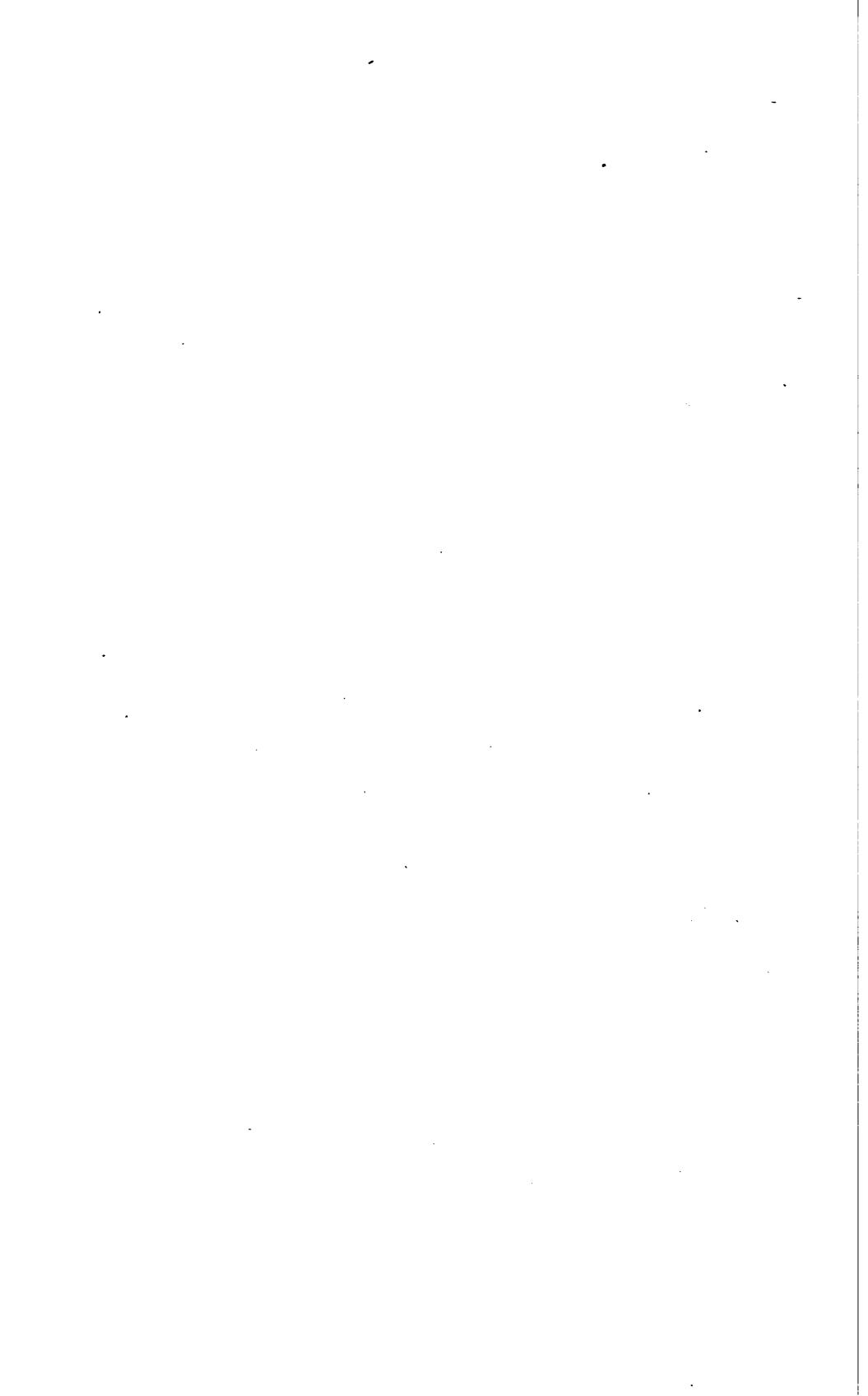
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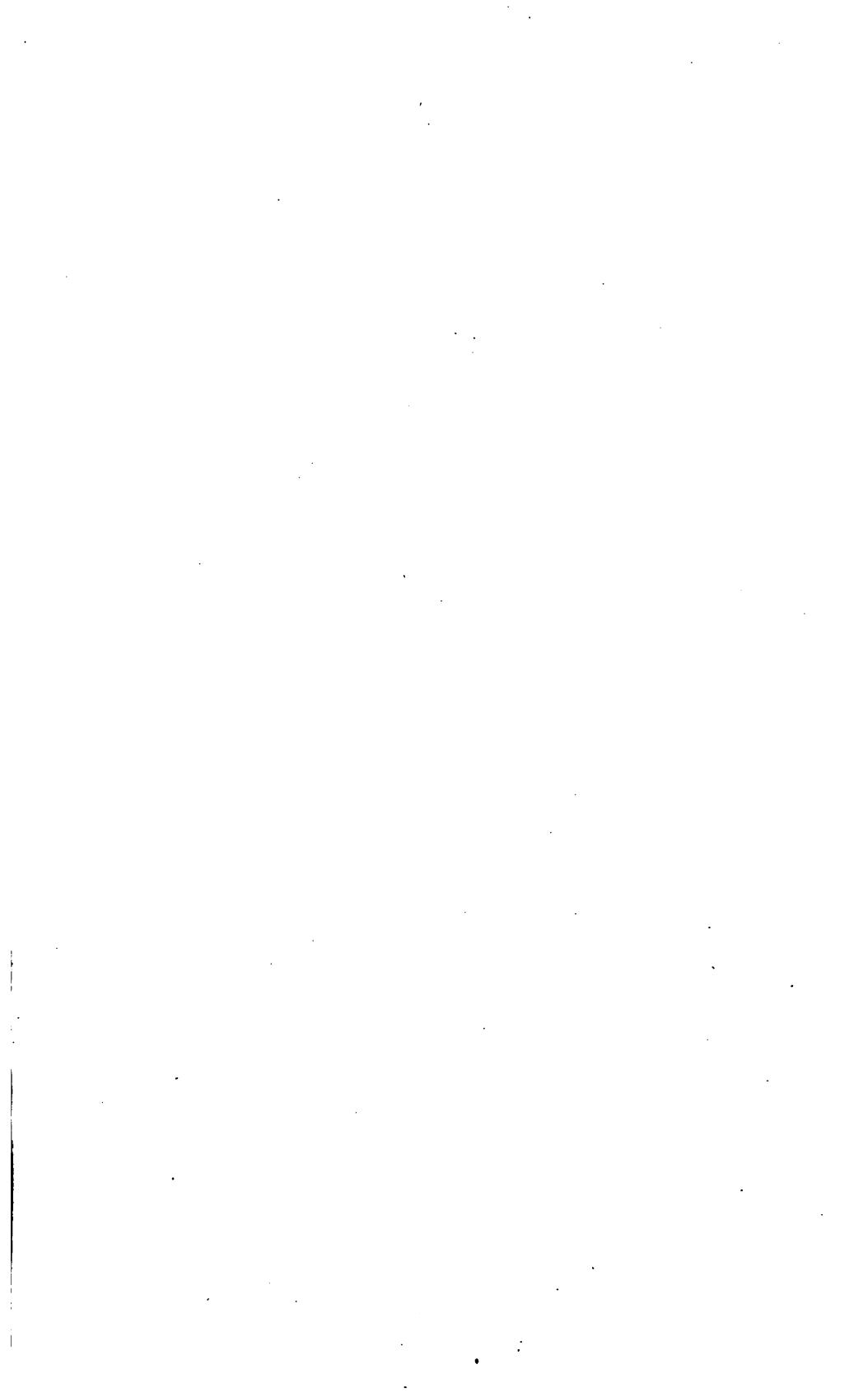
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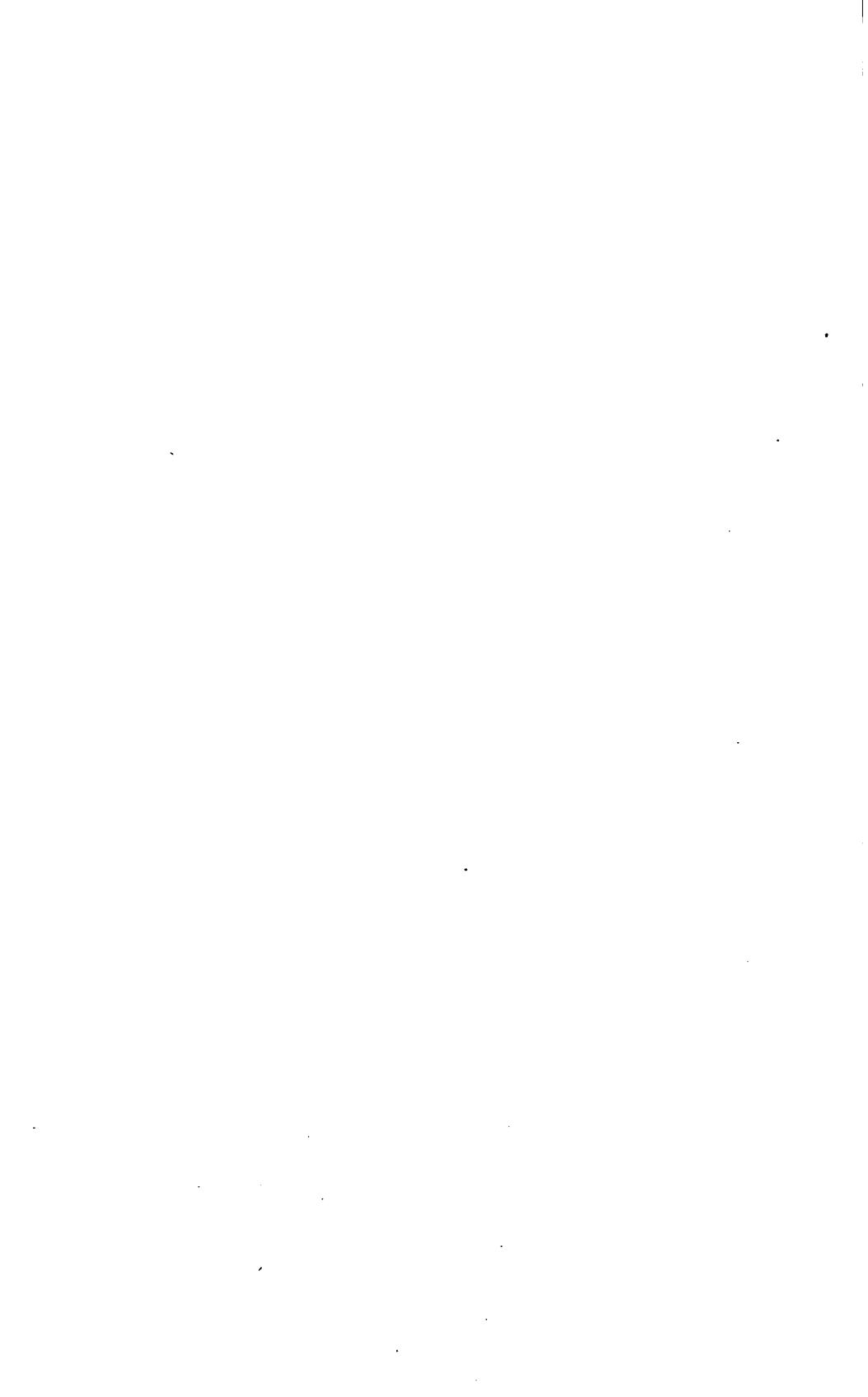
















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